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Applicability of Spares Acquisition  
Integrated with Production (SAIP)  
To Naval Aviation Weapon Systems

by

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## ABSTRACT

Spares Acquisition Integrated with Production (SAIP) is a technique for obtaining economies of scale in spares acquisition by placing orders for spares concurrently with other customer's orders for items requiring the same, or similar, materials and processes. Coordinating such procurement actions to optimize savings, particularly replenishment actions, can be a difficult and time consuming process. The difficulties involved in implementing the technique raise questions with respect to the utility of the technique in achieving savings, the circumstances, if any, under which it should be used, and whether a process can be developed to make implementation of the technique easier and more systematic. This thesis explores these questions from a Naval aviation perspective and concludes that the technique is worth the effort, but some processes used to implement it are of questionable value. A revised transactional model that builds on an earlier prototype process is offered as a possible alternative for achieving more systematic SAIP savings.

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## I. INTRODUCTION

### A. GENERAL

The United States Department of Defense (DoD) spends vast sums of money to acquire the most sophisticated weapon systems in the world. Maintaining these systems in a state of high operational readiness is vital to the national defense and to maintaining the credibility of America's power projection capability. These systems are far from immune to failure, so maintaining them in a high state of operational readiness requires ready access to replacement parts to repair them. Collectively, replacement parts in DoD, comprising both repair parts (consumable bits and pieces) and spare parts (repairable components or assemblies) are called "spares" [Ref. 1:p. 15-16].

DoD maintains an inventory of approximately four million spares [Ref. 2:p. 1]. In FY 1989, \$5.8 billion of the defense budget was devoted to spares procurement. Though that figure represents only 2 percent of the total DoD FY 1989, it is still a very large sum of money, so Congressional, public, and service concern over how these spares are acquired and managed is quite strong [Ref. 2:p. 1]. The well known spares acquisition "horror stories" publicized in the 1980s - \$435 for a hammer, \$110 for a diode, \$9000 for an allen wrench, etc. -



are still painful memories. The public outrage and Congressional concern over these incidents placed DoD's acquisition policies and procedures under a microscope. In response, Caspar Weinberger, as Secretary of Defense in 1983, issued a ten point memorandum on spare parts procurement within DoD. The memorandum directed increased competition, reform of basic contract procedures, and intolerance of unfair or fraudulent pricing practices [Ref. 2:p. 129]. Legislation followed that codified much of the reform initiatives already undertaken by DoD. Most notable were the Competition in Contracting Act (CICA) of 1984 and the Defense Procurement Reform Act of 1985.

The Navy, whose own in-house audits revealed several of the procurement "horror stories," moved out ahead of the legislation to improve its spare parts procurement practices. The Buy Our Spares Smart (BOSS) program was established in August 1983 along with the Price Fighter initiative [Ref. 2:p. 117]. The BOSS program lists six major responsibilities for commands involved in the spares procurement process:

- Ensure the payment of fair and reasonable prices for spare parts and material.
- Promote competition in contracting for spares.
- Minimize use of nonstandard items.
- Encourage procurement of spares concurrent with production runs of end items.
- Stress Project BOSS initiatives as inspection items where applicable.

- Provide performance and financial data necessary for the Naval Supply Systems Command (NAVSUP) to execute lead systems command responsibilities for the BOSS Program. [Ref. 3:p. 2]

The most widely recognized aspect of the BOSS program was the emphasis on "Breakout" - buying spares from the original manufacturer instead of the prime contractor. DoD and the Navy have made great strides in this area as noted by the DoD Inspector General (IG). In 1988, the DoD IG estimated Breakout savings to be \$633.8 million [Ref. 4:p. i]. Though Breakout was the principal method recommended for achieving savings in spares procurement, other methods were also stressed, including procuring spares concurrently with end item production as noted above.

DoD implementation of the policy whereby spares are purchased concurrently with end item production is called Spares Acquisition Integrated with Production (SAIP). It is a simple, common sense idea for taking advantage of economies of scale in spare part and production end item acquisition. In the early 80s, the widely accepted estimate for savings that could result from the SAIP technique was 15 percent [Ref. 5:p. 3-12].

Although simple in concept, the nature of the spares acquisition process may make consolidating spares procurement with end item production very difficult. Often, the commands which have responsibility for purchasing spares (inventory control points) are separate from those having responsibility

for purchasing end item production units (systems commands). Since the contracting process in either command is complex and time consuming, attempting to coordinate a simultaneous purchase while meeting contractor production ordering windows can be a daunting task. [Ref. 6]

Although SAIP promises greater savings in the spares acquisition process, existing literature and instructions provide little guidance on what factors should be "considered" when deciding whether to use SAIP. There is also little current guidance on how SAIP should be implemented in those instances where it seems appropriate to use it. Considering the complexities of the process, the difficulties of coordination, and the lack of guidance, it should be no surprise that more progress has been made in implementing Breakout than in consolidating spares purchases with production end item purchases.

Continued cuts in defense funding in the 1990s will keep the pressure on for Government buying offices to find ways to do more with less. In this environment, no option for improving the efficiency of Government acquisition processes should be ignored. It is for this reason that the Navy Aviation Supply Office (ASO) and the Naval Air Systems Command (NAVAIR) are interested in taking a fresh look at Spares Acquisition Integrated with Production. Should they do it? When should they do it? How should they do it? These are the broad issues that this study will examine.

## **B. RESEARCH OBJECTIVES**

The objectives of this study are to determine what factors should be considered in deciding whether to use SAIP in procuring spares for Naval aircraft and methods and processes to facilitate coordination of the SAIP effort between NAVAIR and ASO. Additionally, it is hoped that a systematic approach to identifying appropriate SAIP candidates and resolving any conflicts between SAIP and other acquisition policies could help to ensure that the promises of SAIP - greater efficiency and savings - can be realized.

## **C. RESEARCH QUESTIONS**

Based on the research objectives the primary research question was:

What are the essential characteristics of the Spares Acquisition Integrated with Production (SAIP) concept and what factors are critical to successful application of the concept to spares procurement for Naval aviation weapon systems?

The following subsidiary questions were developed to facilitate answering the primary research question:

- What is the SAIP concept and what are the presumed benefits of the concept?
- To what extent have the presumed benefits of the SAIP concept been realized in historical application of the concept?
- What factors have been critical to the success or failure of SAIP?



- What are the key issues that must be addressed or resolved in applying the SAIP concept to spares procurement for Naval aviation weapon systems?
- To what extent should the SAIP concept be applied to spares procurement for Naval aviation weapon systems and how can it best be implemented to optimize program results?

#### **D. SCOPE, LIMITATIONS, AND ASSUMPTIONS**

The study concentrated on SAIP as it applies to Naval aviation and coordination between NAVAIR and ASO. Additional research was conducted into how other services execute the SAIP technique. The intent of this additional research was to gather other service experiences and procedures that might be applicable to Naval aviation.

Consideration was given to spares acquisition integrated with weapon system production, but not to examining the issue of integrating ASO in-house procurement of Shop Repairable Assembly (SRA) spares with in-house procurement of Weapons Replaceable Assembly (WRA) spares. The intent was to determine the validity of theoretical SAIP benefits and provide management guidance and information for ASO and NAVAIR to facilitate consideration and implementation of the SAIP concept.

The development of a draft instruction or a transactional model for more systematic application of the SAIP technique were central to the study. It is assumed that the reader is familiar with standard DoD acquisition concepts and the

aviation logistics environment within the Department of the Navy.

#### **E. METHODOLOGY**

The research was initiated with a comprehensive review of available literature on the spares acquisition process in general and on the SAIP process in specific. After sufficient background information was obtained from the literature review, mail surveys and telephone interviews were conducted with Government and contractor personnel highly experienced in the Government spares acquisition process and SAIP in particular. Finally, on-site research was conducted at ASO and NAVAIR.

The literature reviewed in the study was obtained through the Naval Air Systems Command, the Naval Postgraduate School Library, and the Defense Logistics Information Exchange (DLSIE). Relatively little literature was available specifically on the SAIP process.

Telephone interviews were conducted with mail survey respondents who expressed the greatest interest and expertise in the research area. These interviews were intended to either clarify or more fully develop information provided in response to the mail surveys, so they were generally informal, free flowing exchanges centered around the survey responses.

On-site research was conducted to develop a full understanding of ASO and NAVAIR internal procedures and to review

historical files and records that would shed light on the efficacy of the SAIP process.

Smith's *A Guide to Business Research* and Rea and Parker's *Designing and Conducting Survey Research* were very helpful in designing the questionnaires and in preparing for personal interviews [Ref. 7:p. 61-78, Ref. 8:p. 61-79].

#### **F. DEFINITIONS AND ABBREVIATIONS**

The following definitions will be useful in understanding the conceptual and operational discussions presented in this study:

- Basic Ordering Agreement (BOA). A negotiated instrument of understanding between a contracting office and a contractor that contains (1) terms and conditions that will apply to future contracts (orders) between the parties during the term of the agreement, (2) a description, as specific as practicable, of the supplies or services to be provided, and (3) methods for the pricing and issuing of orders under the BOA. [Ref. 9:p. 16.703-1]
- Breakout. Detailed technical data screening to identify items which can be procured from other than the historic sole source vendor. May be applied to initial and replenishment spares, material and support equipment, and service contracts for maintenance and support of weapon systems. [Ref. 3:p. 2]
- Contract Data Requirements Lists (CDRL). A list of data requirements that are authorized for a specific acquisition and made a part of the contract. [Ref. 1:p. 15-4]
- Design Control Activity. A contractor or Government activity having responsibility for the design of a given part and for the preparation and currency of engineering drawings and other technical data for that part. [Ref. 1:p. 15-5]
- Economic Order Quantity (EOQ). The quantity of material for which annual order costs and annual holding costs are balanced to minimize total variable cost. [Ref. 10:p. 1]

- End Item. For the purposes of this paper, an assembly or component produced for installation either into a weapon system in production or into a higher assembly intended for eventual installation to a weapon system in production.
- Initial Operational Capability. The first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics, and which is manned or operated by a trained, equipped, and supported military unit or force. [Ref. 1:p. 15-7]
- Lead time. The time from the date of order to receipt of the spare in inventory including administrative time required to place the order with a supplier, production time for the supplier to produce the part, and delivery time required to get the part to a stock point. [Ref. 11:p. 62]
- Learning Curve. An empirical relationship between the number of units produced and the number of labor hours required to produce them (sometimes call an improvement curve). [Ref. 12:p. 267]
- Logistics Support Analysis. The selective application of scientific and engineering efforts undertaken during the acquisition process, as part of the systems engineering process, to assist in: causing support considerations to influence design; defining support requirements that are related optimally to design and to each other; acquiring the required support; and providing the required support during the operational phase at minimum cost. [Ref. 1:p. 15-9]
- Prime Contractor. A contractor having responsibility for design control and delivery of a system or equipment such as aircraft, engines, ships, tanks, vehicles, guns and missiles, ground communications and electronic systems, ground support equipment, and test equipment. [Ref. 1:p. 15-14]
- Provisioned Item Order (PIO). A Government procured initial spares order placed with a contractor against the list of initial provisioning spares called for in the production contract. These orders are placed within the time frames specified in the Supply Support Management Plan (SSMP). [Ref. 13:p. 4, Ref. 14:p. 2]
- Provisioning. The management process of determining and acquiring the range and quantity of support items neces-



sary to operate and maintain an end item of material for an initial period of service. [Ref. 15:p. 2-1]

- Repair Parts. Consumable bits and pieces; that is, individual parts or nonrepairable assemblies, required for the repair of spare parts or major end items. [Ref. 1:p. 15-15]
- Replenishment. Spares procurement to restock supply system inventories depleted by the consumption of spares as a result of operations and maintenance actions. [Ref. 2:p. 158]
- Safety Level. A level of supply system stock required to compensate for unexpected demands, repair and recycle times, pipeline, procurement lead time, and unforeseen delays. [Ref. 11:p. 61]
- Spare Parts. Repairable components or assemblies used for maintenance replacement purposes in major end items of equipment<sup>1</sup>. [Ref. 1:p. 15-16]
- Spares Acquisition Integrated with Production (SAIP). A procedure used to combine procurement of selected spares with procurement of identical items produced for installation on the primary system, subsystem, or equipment. [Ref. 1:p. 15-16]
- Spares. A term used to denote both spare parts and repair parts. [Ref. 1:p. 15-16]
- Supply Support Management Plan (SSMP). The primary planning document which lists the major supply support milestones and events for a weapon system or equipment acquisition or configuration change, with projected and actual delivery dates for each event, stated in a chronological sequence, commencing with the proposed budget and culminating with the attainment of the projected Material Support Date (MSD).

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<sup>1</sup>DOD Instruction 5000.2 distinguishes between the terms spares, spare parts, and repair parts, but most writers tend to use the terms synonymously. To avoid confusion in this paper, the terms repairable spares and consumable spares will be used to classify types of spares when it is important to distinguish between the two.

## G. THESIS ORGANIZATION

Chapter II of this thesis discusses the literature review and the theory behind the SAIP concept. A brief outline of the DoD spare parts procurement environment is provided. Then, theories behind SAIP, its history, and current regulations are examined. Finally, the presumed benefits and risks of SAIP are discussed along with implementation variations and other issues.

Chapter III provides background information on the implementation of SAIP within the Naval aviation logistics community. Factors driving the current ASO and NAVAIR interest in SAIP and the efficacy of the process to date are discussed. Following those discussions, current issues leading to the questions addressed by this study are presented.

Chapter IV discusses the approach taken in conducting the research to answer the primary and subsidiary questions posed by this thesis. Survey structure, responses, and demographic data are also presented.

Chapter V is the analysis of data collected during the research effort. Various alternatives for implementing SAIP within Naval aviation logistics are presented and discussed.

Chapter VI presents conclusions and recommendations for implementing the SAIP technique within the Naval aviation logistics community.

## II. LITERATURE REVIEW AND SAIP THEORY

### A. INTRODUCTION

Since the 1980s, most literature on spares acquisition has dealt with the implications of the 80s horror stories, increasing competition, and the Breakout process. Little literature has been generated specifically on SAIP. Additionally, most of the literature found on SAIP dates from the early 80s, when SAIP appeared to be a topic of higher interest than it has been of late. None the less, much of what was said about SAIP in the early 80s remains valid today and is useful in examining the SAIP process and understanding the issues involved with its implementation. Particularly useful, is a study conducted by Brenda J. Allen and John B. Abeil in 1983, titled, "An Evaluation of Spare Acquisition Integrated with Production." Their study thoroughly examined many aspects of the SAIP technique in general and its application to specific Air Force programs. The findings and conclusions drawn by Allen and Abeil provide the foundation for the SAIP theory underlying this thesis and are, therefore, recapped below. Other sources referenced below serve to augment and update Allen and Abeil's effort.

The following paragraphs will acquaint the reader with the DoD spare parts acquisition environment in general and will

then define and discuss the SAIP process, its history, presumed benefits and risks, and general issues regarding its use.

## **B. THE DoD SPARE PARTS ACQUISITION ENVIRONMENT**

### **1. Introduction**

There are two distinct categories of spares within DoD: initial or provisioned spares and replenishment spares. Provisioned spares are acquired as part of the weapon system contract to support new weapons systems or subsystems during the introductory stage of the system life cycle before significant usage (demand) data has been gathered. Replenishment spares, on the other hand, are acquired on later contracts or orders after some demand history has been gathered. The processes used to determine purchase quantities and the acquisition methods for the two categories, therefore, are also distinctly different.

### **2. Provisioned Spares**

Initial spares to support a system are selected through a process known as provisioning. Throughout the early phases of system development, logistic support analyses (LSA) are conducted to determine system reliability and maintainability factors and aid in the identification and provisioning of logistics support elements [Ref. 11:p 14].

Contractor and Government engineers and logistics experts review system design and make estimates of such



factors as expected Mean Time Between Failures (MTBF), Mean Time To Repair (MTTR), and appropriate repair level. The information developed as a result of the LSA provides crucial input for the provisioning process.

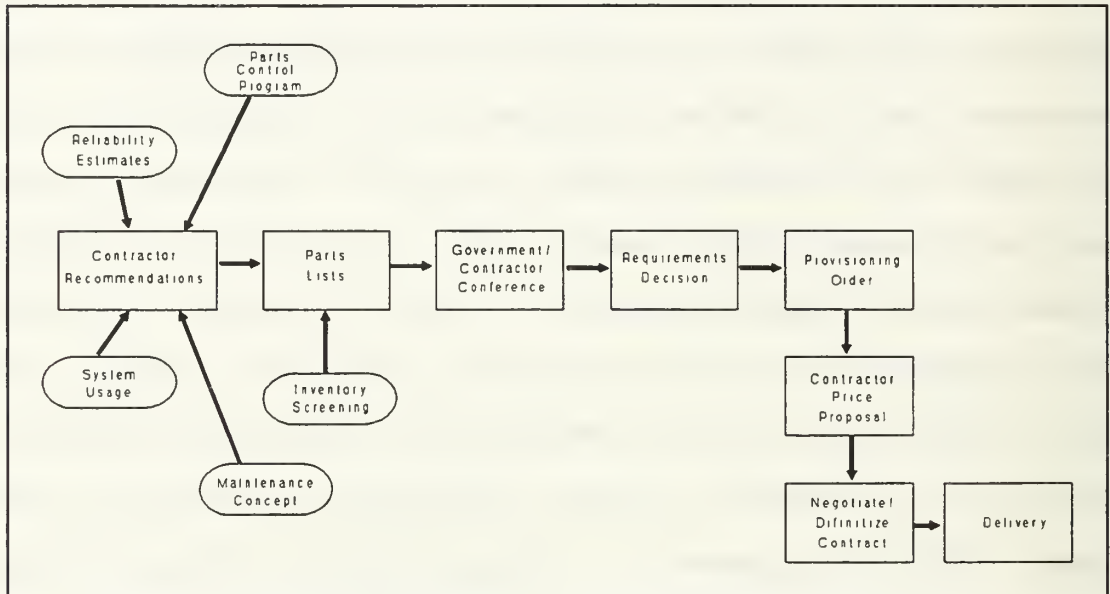
During the Engineering and Manufacturing Development (E&MD) phase of the system life cycle, the Government issues a Provisioning Requirements Document to the contractor. This E&MD contractual document notifies the contractor of provisioning technical documentation requirements, i.e., the list of parts the contractor will recommend as spares to support the system during the demand development period and the format for the list. Contractor recommendations are based on the technical parameters developed as a result of the LSA. The recommended list is provided in the form of a Logistics Support Analysis Record (LSAR). A DoD provisioning team, representing the Program Office, end users, and the inventory control point (ICP), meets with the contractor in an item selection conference to finalize the list. DoD requires the final list to "...be based on clearly defined weapon system or end item readiness objectives." [Ref. 15:p. 1] In order to meet this requirement, the provisioning team relies on readiness based sparing models (RBS) that compute stock levels required to achieve a specified operational availability [Ref. 16:p. 4]. End item production contracts are prepared with a provisioned item order (PIO) line item that provides for placing provisioned item orders against the contract at a

later time. Frequently, provisioning conferences are not held until after award of the first production contract [Ref. 2:p. 21].

After the provisioning lists are finalized and national stock numbers (NSNs) are assigned to the selected items, PIOs for spares are placed against the production contract. The idea is to place these orders production lead time away from the date the Government is supposed to be able to support the new system [Ref. 2:p. 161]. This date is known at the Material Support Date (MSD). In order to expedite production of the spares, these PIOs are usually unpriced. This approach allows the contractor to start producing the parts immediately, thereby making sure they are available to support the scheduled initial operational capability (IOC) date. While the spares are being produced, a detailed price proposal is developed. The contractor submits the proposal to the Government, and negotiations ensue to determine a fair and reasonable price. When the Government and the contractor come to an agreement on the price the contract is modified to reflect the agreement. [Ref. 14:p. 2]

It is important to note that, despite the best, conscientious efforts of the LSA team and application of complex quantitative methods to determine reliability and maintainability factors, decisions made during the provisioning process are, for the most part, based on estimates and unstable designs which are subject to change with operational

experience. The earlier in the acquisition process provisioning spares are obtained, the greater the danger of having incorrect quantities or configurations in stock. Figure 1, from an OFPP study on DoD spare parts procurement, illustrates the basic provisioning process.

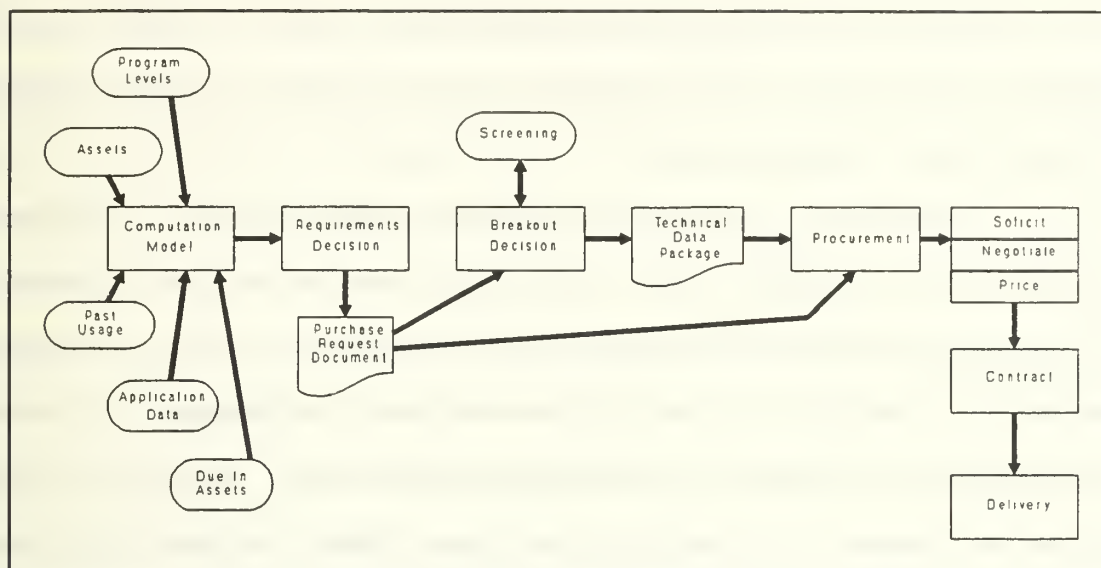


**Figure 1 Basic Provisioning Process** [Ref. 2:p.155]

### 3. Replenishment Spares

As the name implies, replenishment spares are spares that are used to restock the supply system as existing stocks (originally laid in as provisioning spares) are consumed by operational units. An inventory control point and an inventory manager (or item manager) are assigned to manage each type of replenishment part. There are 17 inventory control points within DoD [Ref. 4:p. 1]. Figure 2, taken from the same OFPP study as Figure 1, illustrates a basic replenishment process.

During the early part of a weapon system's life cycle, replenishment spares are often procured similarly to provi-



**Figure 2 Basic Replenishment Process** [Ref. 3:p. 159]

sioning spares; using unpriced PIOs. This situation arises because the estimates made during provisioning conferences prove to be inaccurate as systems fail to perform to specifications, and rapid action must be taken to replace depleted provisioned spares [Ref. 14:p. 2]. As more reliable demand data is developed, though, the replenishment process becomes more automated.

DoD ICPs generally use a continuous review and reorder point system to manage spares. On hand inventory levels are continuously reviewed, and replenishment orders are placed when stocks are depleted to a reorder point. The reorder point is based on a specified lead time for acquiring the



replenishment spares and a safety level. Automated systems alert the item manager that stocks have reached the reorder point and also determine the order quantity. Order quantities (alternatively called operating levels or cycle requirements) provide sufficient material to satisfy normal usage between replenishment acquisitions.

The order quantity is based on EOQ models. Theoretically, these models take into account economic tradeoffs between the cost to order the material and the cost of holding inventory, as well as unit price and system demand, in order to determine economic order quantities that minimize total variable costs. According to Perry [Ref. 10:p. 1], these models rely on several assumptions:

- That order cost and handling cost parameters are accurate.
- That material ordered is received in one delivery or at a constant rate over the procurement lead time.
- That administrative lead time is reasonable and does not unduly impact other inventory costs or parameters such as safety level.
- That the price paid is not a function of the quantity ordered.
- That the demand parameter is accurate and steady.

Perry goes on to point out that these assumptions are often incorrect. Administrative lead time may indeed affect the order cost. The relationship between quantity ordered and price may be very strong and should therefore be recognized in the process, though it is difficult to determine exactly what

the relationship will be until after the acquisition is negotiated. Finally, demand often varies considerably. [Ref. 10:p. 2]

The variable and sometimes inaccurate nature of the parameters relied upon in both the provisioning and replenishment processes contributes to what is often a "hectic" atmosphere in the spares replenishment business. Facing greater demand than originally anticipated, contracting officers often operate in a "fire fighting" atmosphere in which "...esoteric considerations like component Breakout, dual sourcing, competition, and socioeconomic considerations are less important than keeping up with the constant stream of incoming purchase requests for more spare parts." [Ref. 14:p. 3]

In order to expedite replenishment and reduce the workload associated with processing procurement requests, ICPs routinely establish basic ordering agreements (BOAs) with parts suppliers. These suppliers may be either the system prime contractor or the original equipment manufacturer (OEM)/design control activity (DCA) that produced and supplied the part used by the prime for production installations. Priced or unpriced orders may be placed against these BOAs depending on the urgency of the requirement. Unpriced orders are handled in the same manner as the provisioned orders discussed earlier.

The process of buying spares from a DCA rather than the prime contractor is known as Breakout. As discussed in

the introduction to this study, Breakout has been the primary method of obtaining competition and savings in the spares acquisition process since the Secretary of Defense issued the Defense Spare Parts Initiatives in 1983. There has been continued pressure since that time for Government buying offices to pursue Breakout savings. The Defense Procurement Reform Act of 1984 required contractors furnishing spare parts to the Government to identify the actual manufacturers or items to facilitate the Breakout process and as late as 1990 the DoD Office of the Inspector General was auditing service progress in implementing Breakout. [Ref. 4:p. 2] Though increased competition and Breakout were the key elements of the Secretary's initiatives and the Procurement Reform Act, they were not the only initiatives considered by the services to improve the process. As noted earlier, encouraging the procurement of spares concurrent with the production of end item was a key initiative in the Navy's BOSS program [Ref. 3:p. 2].

## **C. Spares Acquisition Integrated With Production (SAIP)**

### **1. Introduction to SAIP**

The procurement of spares concurrent with end item production is usually referred to as Spares Acquisition Integrated with Production (SAIP). References to SAIP are sparse in current DoD acquisition directives -- so sparse, in fact, that they are easily quoted in their entirety here. The

Defense Acquisition Regulations Supplement makes the following points in regard to SAIP:

- (a) Spares Acquisition Integrated with Production (SAIP) is a technique used to acquire replenishment parts concurrently with parts being produced for the end item.
- (b) DoD acquisition managers select parts for SAIP under the criteria in DoDI 4245.12, *Spares Acquisition Integrated with Production (SAIP)*
- (c) Include appropriately tailored provisions in the contract when SAIP is used. [Ref. 17:p. 217.7502]

DoD Instruction 4245.12, referenced in the DFARS quote above was canceled by DoD Instruction 5000.2 which, with respect to SAIP, says only:

Spares Acquisition Integrated with Production. When determined to be cost-effective, procurement of selected spares may be combined with procurement of identical items being procured for deployment.

- (1) Spares acquisition integrated with production may be used to procure spares from either the prime contractor or a subcontractor who is the design control activity.
- (2) Spares acquisition integrated with production requirements will be specified in the Integrated Logistics Support Plan. [Ref. 1:p. 7-A-4]

There is obviously very little guidance offered by these two sources for the program manager or contracting officer considering the SAIP technique. Previous DoD guidance, though far from exhaustive, provided considerably more information on the topic. The fact that there is so little guidance at this point may reflect a DoD attempt to avoid



limiting the prerogatives of program managers and contracting officers. None the less, the information provided in the canceled DoD SAIP instruction is still useful for gaining an understanding of the theory behind SAIP and, what used to be considered, appropriate circumstances for its use.

SAIP is believed to result in savings because combining a spares acquisition with a production contract takes advantage of economies of scale that occur when contractors (primes or subs) place larger orders with their vendors. Placing larger orders results in lower material costs as overhead and general and administrative (G&A) burdens are distributed over a larger production lot thereby lowering unit cost. Additionally, consolidating orders avoids redundant setup costs, loss in learning, and redundant costs for both the Government and contractor associated with negotiating and administering multiple contracts (if SAIP requirements are included in the production contract).

DoD Instruction 4245.12 summarized the rationale behind the SAIP concept in stating that, "SAIP minimizes the cost of spares by avoiding the charges normally associated with separate material orders and manufacturing options." [Ref. 18:p. 1] The instruction also mandated that "DoD acquisition managers ... consider the use of SAIP for the acquisition of spares when the end item is, or will be, in production." [Ref. 18:p. 1] It was suggested that the SAIP technique should be applied to:

- Spares associated with the production of, or major modifications to, end items.
- Initial spares requirements.
- Replenishment spares requirements.
- Foreign military sales requirements.
- War reserve requirements. [Ref. 18:p. 2]

It was also suggested that the technique would be appropriate whenever the following criteria were met:

- When economies of scale will substantially exceed the additional administrative cost of implementing the SAIP technique.
- When sufficient quantities of the item in question are not available within the required period through normal supply channels.
- When the risk of obsolescence is manageable. [Ref. 18:p. 2]

If, after weighing all these factors, SAIP was considered appropriate for a particular acquisition, it was considered preferable to include a SAIP line item in the production RFP because such a practice would involve an early commitment to the SAIP strategy while the acquisition was still in a competitive mode. It would also allow competing offerors to use the additional SAIP requirement as leverage with subcontractors, enhancing the potential for combining spares orders with orders for identical production line items. [Ref. 18:p. 2] Much of this direction was undoubtedly based on early Government experiences with SAIP.

## 2. History of SAIP

The procurement scandals of the late 70s and early 80s elicited renewed interest in SAIP along with other techniques for promoting greater efficiency in the procurement process, but the concept did not originate in 1983. The first Government forays into the SAIP process were made in the early 70s. These efforts illustrate many of the issues surrounding SAIP, so they are briefly recapped in the following paragraphs.

The McDonnell Aircraft Company (McAir) originated the SAIP idea in 1974, offering it to the Air Force for use on the F-15 program [Ref. 5:p. 2-6]. In the F-15 program, three approaches to the SAIP technique were exercised. In the first McAir exercised vendor options to purchase extra production installation radar shipsets which were then sold to the F-15 program office to be used as provisioned spares. In the second approach, the program office again purchased complete shipsets from McAir, but those shipsets were for replenishment spares. In the third approach, the program office consolidated spares replenishment procurement requests from item managers (not shipsets) with production requirements and placed one order with McAir. [Ref. 5:p. 2-7]

These SAIP efforts differed from the normal spares contracting process in several respects. Savings under the first two approaches were questioned by the Defense audit service in 1979. Although a significant savings could be

shown in the combined purchase of shipsets for production and spares, the spares requirement was not for shipsets but for LRUs and SRUs<sup>2</sup>. Buying shipsets resulted in buying greater quantities of some of these parts than sparing models called for. [Ref. 5:p. 2-9] SAIP also affected the timing of the Government procurement actions in all cases. The Air Force was obliged to buy their spares to meet vendor production windows rather than purchasing them lead time away from the expected date they would be required for use. Finally, the ICPs relinquished their responsibility for spares contracting to the program office.

The second Air Force application of the technique was on the F-16 program. This application was different in that the Government initiated the SAIP requirement instead of being offered it by the contractor. Additionally, the decision to use SAIP was made after the production contract had already been awarded to General Dynamics. SAIP, therefore, was included in a separate spares contract linked to the production contract through various clauses and amendments. [Ref. 5:p. 2-15]

General Dynamics, the prime contractor, had already awarded contracts to its vendors and suppliers for production parts. These were fixed price contracts for three years worth

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<sup>2</sup>The terms LRU (Line Replaceable Unit) and SRU (Shop Replaceable Unit) are synonymous with WRA: Weapons Replaceable Assembly and SRA (Shop Replaceable Assembly).



of production, and none of them included SAIP provisions. The Air Force approach to "SAIP" in this case was to direct General Dynamics to exercise the production quantity options written into its contracts with vendors. These additional quantities would then be delivered to the Government as spares in the identical configuration and at the same price as production items. [Ref. 5:p. 2-16]

Thirty percent of the vendors declined to participate in the SAIP effort. The rationale they provided for declining to participate is enlightening with respect to vendor's approaches to pricing spares, and is therefore quoted directly from Allen and Abeil's [Ref. 5:p. 2-17] study of SAIP:

- Spares prices are computed differently from those for production installation items.
- The market conditions upon which prices for production installation items were based had changed considerably since the production options were negotiated.
- Prices for production installation items are traditionally substantially below normal selling prices as they are developed competitively and they are directly influenced by potential spares sales which are offered at full selling prices, including a nominal profit.
- Spares prices are based on actual cost visibility at the time the order is placed.
- Offering spares at the same prices as production installation items increases the inherent risk, exposure to which for such a long period of time might prove not to be in the firm's best interests.

Allen and Abeil assert that these responses are evidence of a "buy-in" phenomenon. That may be the case, though only the

third explanation above provides unambiguous evidence of buy-in. One could also surmise that the vendors were simply not interested in providing an additional service or product to the Government that their fixed price contracts with General Dynamics did not require them to provide. Why not negotiate a new contract for the spares requirement and see how well they could do?

The F-16 experience illustrated the problems likely to be encountered if a SAIP procurement is not addressed early in the production procurement process. Trying to "add-on" the SAIP requirement after production contracts have already been awarded is apt to meet with resistance or rejection from contractors. Both the F-15 and F-16 SAIP efforts provide a good background for considering the benefits and risks of the SAIP technique and other issues pertinent to its application. [Ref. 5:p. 2-15]

### **3. Benefits of SAIP**

Benefits attributed by existing literature to the SAIP technique include lower prices, greater visibility of prices, reduced administrative burden, better configuration control, and enhanced readiness.

#### ***a. Lower Prices***

A generally accepted factor for price savings generated by use of the SAIP technique has been fifteen percent [Ref. 5:p. 3-12]. There are a number of difficulties

with attempting to quantify SAIP savings which are discussed later in this study. None the less, there are common sense reasons to believe SAIP savings may be substantial. As discussed above, the economies of scale discussed previously are one factor in SAIP savings. Manufacturers are able to purchase materials in larger lots which usually leads to price breaks and, therefore, lower direct material costs. Additionally, overhead and G&A expenses are spread over a larger lot sizes, thus lowering unit price. Consolidating spares and production contracts also avoids redundant manufacturing set-up costs which may be the greatest factor in cost differences between spares and production installs [Ref. 5:p. 3-13]. Finally, combining spares and production requirements allows manufacturers to stay on the same learning curve, thus avoiding the phenomenon of learning loss.

Perry's study on the of production lots, though not dealing specifically with SAIP, lends credence to the 15 percent factor. In this study 800 stocked items from 11 different ICPs were analyzed to determine, among other things, the relevance and impact of quantity discounts on buy quantities. An analysis of several hundred contract folders revealed "...numerous instances where the procurement of larger quantities than originally solicited yielded unit price reductions of 10 to 20 percent." [Ref. 10:p. 3]

### ***b. Greater Visibility of Prices***

Combining spares and production requirements on the same order allows contract administrators and Government auditors to easily compare the pricing methodology for both spares and production items to ensure consistency. In a non-SAIP process spares and production items are procured with separate contracts, so it may be difficult to ascertain whether consistent pricing methods were followed in each case. Greater visibility of the consolidated order presumably provides greater confidence that prices are fair and reasonable.

### ***c. Reduced Administrative Burden***

Reduced administrative burdens are believed to result if SAIP requirements are included on the same contract as production items (they do not necessarily have to be). Preparing one RFP, one proposal, negotiating, awarding, and administering one contract should be less burdensome, or time consuming, for both the contractor and the Government than contracting separately for spares and installation units.

### ***d. Better Configuration Control***

Keeping spares in the appropriate configuration to support production items can be difficult. Weapon systems are particularly susceptible to design changes early in the production and deployment phase of the life cycle with the result that deployed systems may have several different



configurations of the same part installed. Provisioning of spares in the appropriate configuration and quantity to support these design changes requires careful coordination of the contracting effort and good visibility of evolving designs. Design changes can result in the hectic atmosphere alluded to in Chapter I, as contracting officers rush through repetitive contract actions on short notice to provide appropriately configured spares to the field.

Theoretically, SAIP can avoid this problem and ensure greater compatibility of spares and production end items, with less effort, if contract clauses are appropriately tailored tasking the design control activity to produce spares in an appropriate ratio to evolving production designs. [Ref. 5:p. 3-19, Ref. 19:p. 2]

*e. Enhanced Readiness*

It has been held that SAIP can enhance readiness by helping to ensure timely delivery of spares. This theory depends on awarding the contract containing SAIP to the prime. Presumably, the prime is very sensitive to scarcity of materials and other vendor concerns since profit depends on meeting the production schedule. In addition, the prime's production requirements are apt to represent a larger volume of the subcontractor's business than the Government's spares requirements. Therefore the prime is motivated to work with the subcontractor to ensure timely delivery of parts and has

greater leverage with the subcontractor than the Government would with a separate spares contract.

#### **4. Risks of SAIP**

There are a number of potential risks associated with SAIP. Some result from ordering spares earlier in the system life cycle than would normally be the case and others from increased costs that the process can generate. The most notable risks mentioned in the literature include obsolescence, over procurement, and availability of funding.

##### ***a. Obsolescence***

Because employing the SAIP technique may involve ordering spares earlier in the provisioning process than normal, there is a risk spares may become obsolete as a result of design changes to the still evolving system. A phased ordering approach along with configuration control clauses in the contract that call for prorating deliveries of spares with changing system designs is offered as a method for controlling this type of risk. [Ref. 19:p. 1]

##### ***b. Over procurement***

The risk of over procurement is again related to ordering spares before designs have stabilized and, more importantly, before sufficient demand data has been gathered to determine appropriate stock levels. A phased ordering approach may or may not counter this type of risk [Ref. 5:p. 3-9]. Basing a procurement on insufficient demand history may

result in having simply having more of a particular part than is necessary, even if the design is not obsolete. Unit price savings may be irrelevant if there is an over investment in total stock.

### *c. Availability of funding*

In order to obtain true SAIP savings, i.e., combining spares requirements in some way with the prime contractor's production orders to achieve larger vendor production lots and economies of scale, spares may have to be placed on order when the contractor is ordering long lead items. However funding may not be authorized for long lead spares. A contractor who undertakes to order material based on Government assurances that a spares order will be forthcoming incurs a substantial risk that funds will in fact not be made available.

## **5. Other SAIP Issues**

### *a. Prime Contractor vs Subcontractor*

Presumably, SAIP arrangements may be entered into with either the prime contractor or a subcontractor or vendor. Both approaches would appear to have benefits and costs. Entering into a SAIP arrangement with a prime contractor can place the responsibility for ensuring proper configuration of the spares on that prime and may result in enhanced readiness as discussed above. However, such an approach will also

result in the prime adding his administrative costs and profit to the price of the spares. On the other hand, contracting to buy spares from a subcontractor or vendor concurrently with their production of end items for the prime will probably result in lower cost, but may entail a loss of configuration control. A contracting officer might have to consider which of these two "drivers," configuration control or cost, is of ultimate importance and decide accordingly. [Ref. 5:p. 5-2]

#### ***b. Timing***

Coordination and timing of the spares purchase with procurement of the end item is obviously critical to the success of the SAIP effort. Spares purchases must coincide with "hot" production lines if any benefits are to be realized [Ref. 5:p. 5-1]. But, as discussed above, different offices or commands may be responsible for the production and spares contracting responsibilities, and their requirements may not coincide. This issue would not appear to be as critical in the initial introduction of a new system when initial spares are being procured to support that introduction, but the same cannot be said for spares replenishment requirements.

The decision to buy replenishment spares is generally based on computer based continuous reorder review systems that consider on hand quantities, demand history and existing orders to recommend a reorder quantity [Ref. 10:p. 1]. These reorder recommendations will not be based on



pending production contracts. Should item managers then investigate to see if production contracts are pending? Should they accelerate or postpone their procurement requests to coincide with production contracts? Additionally, funding for spares may come from different sources than end item production funds, and the two sources of funds may not be available at the same time. Though critical to successful implementation of the SAIP technique, coordination and timing in an environment typified by separate contracting commands with different missions, goals, and priorities would appear difficult, if not impossible to achieve.

### *c. Variations of the Technique*

The SAIP technique is primarily a means of consolidating orders to achieve economies of scale. It would not seem to demand a specific contract type or methodology. Any number of approaches may be taken to implementing the technique. Some, or all of the benefits of the technique could conceivably be obtained by:

- Combining all requirements on one Government contract with the prime contractor.
- Negotiating separate spares and end item production contracts concurrently with the prime contractor.
- Negotiating a separate spares contract with a subcontractor concurrently with the sub's production of end items for a prime contractor.
- Negotiating a spares contract with a prime or sub concurrently with some other customer's spares contracts.

The approach to implementing the technique is limited only by the imagination of the contracting official and applicable laws and regulations governing Federal contracting (which, as already pointed out, are sparse on the topic of SAIP).

#### *d. Provisioning Versus Replenishment*

One of the key issues regarding SAIP is whether it is appropriate to use the technique for replenishment requirements or if it should be restricted to initial provisioning requirements. The DFARS expressly states that SAIP is a technique "... used to acquire replenishment parts concurrently with parts being produced for the end item." [Ref. 17:p. 217] It is not clear from the brief reference to SAIP in the DFARS whether "replenishment" in this case was to be interpreted in the strict sense discussed above, or whether it was an imprecise use of the term intended to encompass the universe of initial provisioning and replenishment spares. However, the canceled DoD SAIP instruction was clear on this subject, stating that SAIP was appropriate to use for both types of spares procurement [Ref. 18:p. 1].

Allen and Abeil, however, point out the difficulties that can be encountered in attempting to apply SAIP to replenishment requirements. The issues of distinctly separate contracting commands for production items and spares, coordination and timing issues, and funding issues may all thwart attempts to implement SAIP on any procurement actions other

than initial requirements included in production contracts for new end items [Ref. 5:p. 5-3].

Production contracts and contractor production schedules are generally managed on an annual basis. Contractors also plan their procurement of production materials on an annual basis to support the production schedules. SAIP procurement must be timed to coincide with the production schedule, and preferably, with the contractor's procurement order release date so the contractor can achieve economies of scale in his purchases and pass the savings on to the Government. Replenishment spares purchases, on the other hand, are not planned on an annual basis. Procurement requests are instead generated when computer reviews reveal that a given stock item has been depleted down to its reorder point. Given the different procurement environments for initial spares and replenishment spares, it is reasonable to question whether attempts should be made to apply SAIP to replenishment requirements.

#### *e. Selection of SAIP Candidates*

It was noted in Chapter I that DoD manages approximately 4 million spares. Should all of these parts be considered for application of the SAIP technique. Considering the difficulties that may be encountered in implementing the technique, it seems clear that such an approach would not be cost effective and that SAIP should be limited to a smaller

universe. As with other SAIP issues, there is no existing guidance in this area, so the decision on what criteria should qualify a given spare as a SAIP candidate is left to weapons managers.

#### *f. SAIP Versus Competition and Breakout*

SAIP is a cost saving measure, as are competition and Breakout. Competition and Breakout requirements are codified and regulated -- SAIP is not. It is appropriate, therefore, to question whether SAIP might conflict with these other contracting imperatives. Will implementation of the SAIP technique preclude competition or can it be implemented in a competitive acquisition environment? Allen and Abeil's study suggested that SAIP was best implemented through the prime contractor [Ref. 5:p. 5-3]. Does this mean then that it should not be used when spares are being broken out? If there is a conflict, must the codified and regulated imperatives take precedence over SAIP?

#### *g. Determining SAIP Savings.*

It is held to be common sense that SAIP will generate savings as a result of economies of scale. Can this theorem be verified with quantifiable data? How can a contracting officer be sure that significant savings have been obtained. This is a crucial question, especially if a SAIP methodology is followed in lieu of competition or Breakout. It is also important in deciding on selection criteria for



application of the SAIP technique. At what price level will SAIP savings be significant enough to justify the considerable time and effort involved in coordinating a SAIP acquisition?

#### **D. SUMMARY OF SAIP THEORY**

The paragraphs in this chapter have outlined the DoD spares acquisition environment and provided a solid foundation in the theoretical aspects of the SAIP technique and issues that must be considered in implementing it. SAIP has historically been difficult to implement and it is likely that this fact has thwarted its implementation. However, the fiscal realities of the post cold war era have forced the services to investigate new and innovative ways to save money. They have also been forced to revisit old ways of doing business that may not have been used to their full potential. This is the case with SAIP. The Naval aviation community is dusting off the SAIP technique and investigating its applicability to the new acquisition environment. The circumstances motivating this new interest in SAIP and this research effort are addressed in the following chapter.

### III. SAIP AND NAVAL AVIATION LOGISTICS BACKGROUND

#### A. INTRODUCTION

Efforts have been on going over the last several decades to improve management within the Department of Defense. Various studies, commissions, and legislation have been undertaken to that end. One of the most recent, and certainly the one with the greatest impact, was the President's Blue Ribbon Commission on Defense Management, usually referred to as the "Packard Commission" (after the chairman, David Packard). The commission was established by President Reagan in 1985 to:

... study defense management policies and procedures, including the budget process, the procurement system, legislative oversight and the organizational and operational arrangements, both formal and informal, among the Office of the Secretary of Defense, the Organization of the Joint Chiefs of Staff, the Unified and Specified Commands system, the Military departments, and the Congress. [Ref. 20:p. 1]

The Packard Commission completed its work and reported to the President in 1986, making a number of recommendations to improve DoD operations.

During the years since the Commissions report, many of its recommendations have been successfully implemented. However, in 1989, President Bush directed the Secretary of Defense to develop a plan to fully implement the initiatives and to

"...realize substantial improvements...in defense management overall." [Ref. 21:p. 1] Secretary Cheney's efforts reported the results of the Department's efforts in the Defense Management Report (DMR), outlining actions needed to improve DoD. The services recommended a number of initiatives that could be taken to achieve the improvements called for by the DMR. The service offered initiatives were reviewed by OSD, modified and adjusted where necessary, and signed by the Secretary of Defense as Defense Management Report Decisions (DMRD). Together, the initiatives have been estimated to have the potential for eliminating 42,900 civilian and military positions and saving \$39 billion over fiscal years 1991-95 [Ref. 22:p. 1]. One decision is of particular importance to this study -- DMRD 901: "Reducing Supply Management Costs."

DMRD 901 calls for several actions in supply management that are projected to save \$10.1 billion:

- Moving operational costs into stock fund accounts.
- Change inventory stockage policies to reduce transportation costs.
- Increase the use of commercial items.
- Increase the use of multiple year contracts.
- Permit DoD to fund technical data within stock fund accounts. [Ref. 22:p. 2]

Each of the services have been challenged to achieve some portion of the DMRD 901 total savings, and of course each major supply command within the services must attain some

smaller portion of the savings. The Navy Aviation Supply Office's DMRD 901 "challenge" is to save a total of \$1.8 billion over the five period from 1991 to 1995 [Ref. 23].

Achieving \$1.8 billion in savings over five years is a daunting task. ASO's plan calls for saving \$800 million by pursuing alternative spares solutions<sup>3</sup>, \$506 million by reducing inventory levels, and \$537 million by pursuing new contractual methods. The new contractual methods envisioned by ASO include more competition, long term contracting and SAIP. [Ref. 23]

That SAIP is a key part of ASO's strategy to meet its savings challenge is evident from the frequent mention of the technique in any ASO discussion of the current or future contracting environment. The savings figures noted above were extracted from a brief given by the ASO Commander to the National Contract Management Association (NCMA) in February of 1992 [Ref. 23]. The topic was again brought up by the Commander during the 1992 "Day With Industry" symposium at ASO. During this briefing, a list of potential SAIP savings on specific systems was presented that totaled approximately \$17.7 million [Ref. 24]. The most concrete evidence of ASO's commitment to the SAIP technique is in the ASO Acquisition

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<sup>3</sup>"Alternative Spares Solutions" is an approach to providing spares support which embodies reliability improvements, alternative ILS solutions, and repair of consumables. A detailed description is beyond the scope of this paper. Interested readers may wish to inquire into ASO's BOSS II program (Best Overall Support Solution).



Strategy for 1992-1996. In discussing responsibilities of the ASO Acquisition Executive under Strategy One, "ASO Framework for Acquisition Planning," the Acquisition Executive is called upon to exercise leadership as the overall integrator of acquisition-centered efforts in ASO. The office is to coordinate performance of planning and act as the focal point for integrating actions required to implement acquisition plans. Such plans are to cover among other things:

Opportunities for cost effective/value-based procurement, such as: **buys in conjunction with other commands or with planned suppliers' production runs**; multiple item contracting; multiple year procurements; use of vendors' pricing arrangements; and, procurement of long lead time material. [Ref. 25:p. 10]

It is obvious from these recurring references to the SAIP technique, that ASO believes SAIP has the potential to achieve substantial savings if it can be effectively implemented. Effective implementation appears to be the problem. This statement does not mean that SAIP has been ineffective when it has been applied, but that applying the technique systematically across a broad range of procurement actions appears to have been particularly difficult. For instance, discussions with the ASO Acquisition Executive's Office revealed that, in the past, out of nine major spares procurements from the Lockheed Corporation with SAIP potential, they "missed the boat or window" on seven of them [Ref. 26]. The general feeling at ASO was that, although the command was supportive

of SAIP and encouraged Weapons Managers to explore SAIP potential, actually closing on SAIP opportunities continued to be an elusive goal. They "missed the window" continuously -- i.e., they failed either to learn of SAIP windows or to generate procurement actions in time to meet the windows.

To counter this situation, ASO has stressed the importance of considering SAIP early in the acquisition planning process. "Who else is buying this? When are they buying it? Can we pull it out of the machine and really look at our requirements?" [Ref. 26] Additionally, the Acquisition Executive's office has sought to improve communication and coordination with the NAVAIR, in an attempt to obtain more timely and consistent information regarding production contract actions and SAIP opportunities. Despite these efforts, the expressed feelings of individuals contacted at both NAVAIR and ASO was that more could and should be done to expand application of the SAIP technique in Naval aviation spares procurement. One of the research respondents succinctly summarized the current SAIP dilemma facing ASO when he said:

I would guess that we miss SAIP opportunities routinely. The concept of SAIP is common sense; however, the concept needs to be re-engineered into a common sense approach for identification and execution of requirements. Unless it is "easy," [weapon systems managers] will not routinely check the SAIP opportunity. SAIP usually depends on the motivation of the IM [item manager]. [Ref. 27:p. 1]

## B. ISSUES

Based on the background study, the question of more extensive application of the SAIP technique raises a couple of questions: Considering the difficulty of implementing SAIP, is it worth the effort, and, if so, are there easier ways to implement SAIP to encourage more extensive application of the technique? These questions are the basis for the formal research questions posed in Chapter I of this paper. The approach taken to answering these questions and the information obtained from that approach is discussed in the following chapter.

## **IV. METHODOLOGY AND DATA**

### **A. METHODOLOGY**

#### **1. Introduction**

The research methodology was designed to provide a systematic approach to uncovering the theory and background of the SAIP concept, determining the issues involved, drafting appropriate research questions, and then tapping appropriate sources to obtain information for constructing answers to the questions. The research was conducted in three distinct phases:

- Literature review and initial contacts.
- Mail surveys.
- On-site research at NAVAIR, the Naval Supply Systems Command, and ASO.

#### **2. Literature Review and Initial Contacts**

The research was initiated with a comprehensive review of available literature on the spares acquisition process in general and on the SAIP process in specific. The literature reviewed in the study was obtained through the Naval Air Systems Command, ASO, the Naval Postgraduate School Library, and the Defense Logistics Studies Information Exchange (DLSIE).



Initial telephone contact was made with key personnel in the ASO Acquisition Executive's Office and in the NAVAIR Tactical Air Contracts Division. Contact with NAVAIR was restricted to the Tactical Air Contracts Division because it is the lead division for developing SAIP policy and procedures for NAVAIR.

The main thrust of this research phase was to determine the theory behind SAIP and develop the background for this thesis. The data gathered from this effort were presented in the two previous chapters.

### **3. Mail Surveys**

After sufficient background information was obtained from the literature review and research questions were formalized, mail surveys were sent to Government and contractor personnel highly experienced in the Government spares acquisition process and SAIP in particular.

The surveys were designed to obtain subjective information from experienced acquisition professionals on their approaches to implementing SAIP and on the perceived benefits and risks of the technique. Various sources were consulted or reviewed to aid in the survey design. Two texts were most helpful: Charles Smith's *A Guide to Business Research*, and Rea and Parker's *Designing and Conducting Survey Research* [Ref. 7 and Ref. 8]. The intent of the surveys was to gather opinions on the validity of SAIP theory and to

solicit experiences and suggestions with applicability to implementation of the SAIP technique in Naval aviation spares procurement. It was also hoped that respondents would be able to provide quantifiable savings data that would assist in determining appropriate, cost effective, criteria for applying SAIP<sup>4</sup>. This survey approach necessitated limiting the survey to experienced individuals at relatively high levels in the procurement offices of the organizations contacted. The assumption was that only such experienced personnel would be able to offer the assessments and insights sought by the survey. Questions, therefore, were generally open ended, requiring short written answers designed to determine:

- The extent of the respondent's personal knowledge and/or experience with the SAIP concept.
- Benefits, preferably quantifiable, obtained by using the concept.
- Problems encountered in applying the concept.
- Systematic procedures, if any, used in applying the concept.
- Other lessons learned or recommendations for applying the concept.
- Subjective assessments of SAIP concept applicability and utility to aviation spares procurement.

Two separate questionnaires were developed - one for use by Government agencies and one for use by commercial

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<sup>4</sup>Cost effective in this context implies realizing net savings after increased costs of implementing SAIP (if any) are offset by contract price savings.

contractors. The intent was to target the specific types of information available from these divergent sources without burdening respondents with questions that they would not understand or that simply would not be applicable to their situation. The two questionnaires and responses are reproduced in Appendices A and B.

Questionnaires were mailed to weapons managers and contracting officials at ASO, NAVAIR, selected Air Force and Army program offices, and aerospace contractors. The aerospace contractors were selected based on recommendations by the ASO Acquisition Executive's Office. Mail surveys were followed up with telephone interviews to those respondents who demonstrated the greatest interest and expertise in the research area -- either to clarify their responses or to more fully develop opinions and concepts discussed in their responses.

#### **4. On-Site Research**

Once mail surveys had been distributed, and sufficient responses had been received to gather a broader understanding of issues and other service approaches to SAIP, on-site research was conducted at NAVAIR, NAVSUP, and ASO. A visit was made to the NAVSUP Cost Avoidance Office to obtain information on any historical savings reported as a result of implementing the SAIP technique. NAVAIR and ASO were visited to:

- Investigate existing procurement processes with respect to SAIP.
- Review on-site documentary data on the SAIP process (memos, reports, instructions, etc.).
- Conduct extensive personal interviews with key individuals involved in the SAIP process to determine the issues, gather personal assessments, and discuss potential changes to the process.

Advance copies of the formal research questions and the mail survey were sent to both NAVAIR and ASO so key points of contact would understand the character of the research. This step allowed them to prepare for the researcher's visit by gathering appropriate materials and data and lining up additional points of contact with experience or interest in SAIP. On-site interviews were free-flowing discussions of the SAIP universe with the survey questionnaire serving as a point of departure for more detailed and wide ranging discussions.

Information was solicited from all survey respondents and interviewees on a non-attributable basis to encourage frank assessments and discussion of the SAIP technique. This research methodology was effective for gathering data necessary to answer the formal research questions.

## **B. RESEARCH DATA**

### **1. General**

Data gathered from the research effort fell into the following three general categories:



- Opinions and recommendations of experienced acquisition professionals regarding SAIP benefits, risks, and other issues discussed in Chapter II of this paper.
- Limited quantitative and anecdotal information with respect to successful application of the SAIP technique.
- Current NAVAIR/ASO procedures for implementing SAIP.

The following section will present some observations on responses to the mail survey. Successive sections will present the research findings -- first with respect to SAIP theory and then with respect to current NAVAIR/ASO SAIP procedures.

## **2. Survey Responses**

Table 1 provides some basic statistical data derived from survey responses. Since the number of surveys was limited, and the primary intent of the surveys was to gather insights from other SAIP practitioners that might be applicable to Naval aviation logistics, further statistical analysis of responses to individual questions was not performed. As stated earlier, the mail survey was intended to target highly experienced acquisition professionals who could provide useful insights and recommendations with regard to application of the SAIP technique. Since comments were solicited on a non-attributable basis, they are often cited in the following sections without specific reference to individuals or organizations. Table 1, therefore, illustrates the general level of acquisition experience held by survey respondents, so the



### 3. Validity of Theoretical SAIP Benefits

#### *a. Price Savings and Determining Savings*

All individuals contacted believed that SAIP would generate price savings as a result of economies of scale. They differed, however, on how such savings might be quantified.

The Air Force organizations contacted were not required to report savings from the application of SAIP and had not attempted, therefore, to determine savings. Army offices also had not made little attempt to quantify SAIP savings.

Navy offices had been required to estimate SAIP savings and report them in the Cost Avoidance Summary in the BOSS report [Ref. 3:p. C-5]. Table 2 provides a matrix of savings reported to NAVSUP on cost avoidance reports for fiscal years 1985 - 1989. The cost avoidance reports submitted to NAVSUP did not explain how savings were determined. They generally just stated that savings were the result of procuring spares concurrently with production items. Most Navy personnel contacted in this study stated that the general approach to determining savings was to estimate what a stand-alone spares buy would have cost based on historical data or contractor estimates of the cost of smaller production runs. This stand-alone estimate would then be compared to actual negotiated contract prices to estimate savings. The consensus

was that this would be a "ballpark" estimate. If these estimates are indeed in the "ballpark," the 8.5 percent of total reported cost avoidance attributed to SAIP would appear to be a substantial figure.

**TABLE II                      NAVSUP COST AVOIDANCE SUMMARY**

	(\$ Millions)				
	FY 85	FY 86	FY 87	FY 88	FY 89
Breakout					
ASO	\$141.9	\$154.2	\$134.9	\$59.7	\$99.4
SPCC	\$23.5	\$25.0	\$53.5	\$34.4	\$67.9
Other	\$27.3	\$33.5	\$1.2	\$50.7	\$38.4
Subtotal	\$192.7	\$212.7	\$189.6	\$144.8	\$205.7
Competition					
Spares	\$79.5	\$106.2	\$140.6	\$176.1	\$11.8
Non-Spares	\$21.6	\$6.8	\$14.0	\$2.8	\$31.1
Sub Total	\$101.1	\$113.0	\$154.6	\$178.9	\$42.9
Price Fighter	\$1.5	\$6.9	\$31.6	\$21.8	\$22.9
SAIP/TSP	\$25.5	\$44.7	\$21.2	\$41.0	\$20.7
EOQ	\$6.6	\$1.6	\$0.1	\$0.4	\$0.1
Refunds	\$1.2	\$2.4	\$1.8	\$1.4	\$1.4
V/E			\$5.2	\$6.7	\$5.2
Total C/A	\$328.6	\$381.3	\$404.1	\$395.0	\$298.9

Source: NAVSUP Cost Avoidance Office

Contractors that responded were generally unable to suggest more accurate methods for quantifying SAIP savings. One suggested that life cycle cost models such as LCC MOD/F-16 could be utilized to compute actual SAIP savings. However, most felt determining savings without actually preparing two proposals would be too difficult due to the large number of variables involved in the pricing process. The overwhelming



majority did assert that implementing a SAIP process would generate substantial cost benefits. Contractor responses to questions regarding factors responsible for SAIP savings were quite varied. The primary factors they cited included:

- Avoidance of redundant seller set-up costs (flowing down to subcontractors).
- Reduction in redundant administrative and handling costs.
- Economies of scale, particularly with respect to learning curve effects and quantity discounts.
- Concurrent make or buy planning by industry.
- Savings in lead time required to deliver negotiated spares on prime production contracts and better configuration control which result in cost savings (One contractor estimated that lead time could be reduced by as much as fifty percent).

Economy of scale was noted by all Government and industry respondents as the chief savings factor in SAIP procurements - - outweighing other factors by a very large degree. Regardless of how much money is saved, or how savings are estimated, the respondents attitudes towards savings are best summarized by one respondent's comment that savings in SAIP are "...an article of faith." [Ref. 6]

#### ***b. Greater Visibility of Prices***

No information was obtained from the survey that would tend to directly validate or invalidate the assumption of greater price visibility. The research data did confirm that it can be difficult for spares contracting activities to

obtain timely notification of production contracting efforts. This situation, though, was viewed as an impediment to employing the SAIP technique, rather than a condition that would be mitigated by SAIP.

*c. Reduced Administrative Burden.*

Several respondents, mostly from industry (only one was from Government), mentioned reduced administrative burden as a benefit under the assumption that spares and production items would be included on the same contract. However, on-site research and discussions with individuals at NAVAIR and ASO indicated that the degree of coordination required to include spares on production contracts involved considerable administrative effort. Individuals from both commands expressed a degree of frustration with the time and effort required to effect a SAIP procurement.

*d. Better Configuration Control*

Few respondents viewed better configuration control as a benefit of SAIP. Most viewed configuration control and obsolescence as a risk, but one that is manageable. Those who believed configuration control was a benefit, attributed the benefit to concurrent production that allowed spares to be produced in the same configuration as the end item. This position assumed contractual clauses requiring spares quantities to be produced in an appropriate ratio to production items. Those who viewed configuration control as a risk

generally attributed the risk to obsolescence that would result if spares were bought concurrently with production before system design was stabilized.

No survey respondent or interviewee offered quantitative or anecdotal evidence to support their assertions of configuration control as risk or benefit. However, Arthur and Fisher [Ref. 28] conducted a study in 1980 to investigate the influence of SAIP on the obsolescence of spare parts in the A-10 program. This study used statistical methods to compare the incidence of obsolescence of A-10 SAIP spares procured early in the provisioning process with stand-alone spares buys for the same aircraft. The authors concluded that there was no statistically significant difference in obsolescence rates. They also stated they were unable to determine why the SAIP spares did not suffer a higher rate of obsolescence since they were purchased earlier. It is interesting to note, though, that the SAIP contract required spares to be modified when ECPs changed the system design and also required spares to be produced in a specific ratio to production installation items. [Ref. 28:p. 30]

#### *e. Enhanced Readiness*

Only two Government and two industry respondents mentioned enhanced readiness as a benefit of the SAIP technique. In each of these responses, enhanced readiness was attributed to concurrent production of spares resulting in

greater spares availability when systems are first fielded. Both Government respondents were from Air Force contracting offices. Air Force contracting organizations limit application of the SAIP technique to initial provisioning requirements, which might explain why they would view enhanced readiness as a consistent benefit of SAIP.

#### **4. Validity of Theoretical SAIP Risks**

##### ***a. Obsolescence and Overprocurement***

As discussed above, the majority of respondents viewed obsolescence and overprocurement as a potential risk of SAIP. This risk was attributed to design instability, in that changing designs could render spares obsolete if they were procured early enough in the provisioning process to be consolidated with end item production. No respondents mentioned the possibility of overprocurement as a result of simply ordering too many spares prior to an adequate demand development period.

##### ***b. Availability of Funding***

Availability of funding was not a topic of particular concern in survey responses, but on-site research revealed that funding issues can be an area of considerable risk. For example, in 1990 NAVAIR was in the process of breaking out a requirement for the APG 71 radar. The buy required some long lead funding. ASO also wanted to participate in the acquisition. Specifically, they wanted AWG-9 transmitters and power



supplies which are subcomponents of the APG 71 radar. They forwarded their requirements to NAVAIR, and those requirements were included on the advanced acquisition contract negotiated by NAVAIR. ASO was expected to provide funding prior to an order being placed against the contract for delivery of their requirements. ASO had difficulty providing the funds and considered dropping their requirements. This situation generated considerable concern at NAVAIR since ASO's requirements were part of the total pricing equation. Individuals involved in the process acknowledged that a pull out by ASO would have required renegotiation of the whole contract.

### *c. Dynamic Requirements*

The research disclosed a very substantial risk of SAIP that was not mentioned in the literature. Unstable replenishment requirements may cause severe perturbations in a SAIP arrangement. Discussions with NAVAIR contracting officials and ASO weapon managers revealed that ASO's spares requirements are subject to quantity variations over time as a result of demand and inventory fluctuations. The earlier spares are ordered in advance of the projected need date, the more likely the quantity requirement is to vary. The nature of SAIP generally requires spares to be ordered earlier than they would otherwise be, so production windows can be met. As a consequence, the risk of variation in required quantity may be greater in a SAIP procurement than in others.

Interviewees at both sites stressed that NAVAIR and ASO must agree on the quantity requirement, since prices are negotiated based on the total quantity. If one party chooses to vary quantities or pull out of a contract, it impacts the unit price paid by the other party since the scale of the total buy is reduced. Such situations may require renegotiation of the contract, and may result in termination liability for the contracting command even though it was the other command that pulled out of the contract. Contracting personnel interviewed at NAVAIR expressed extreme sensitivity to this issue.

## **5. Research Findings On Other SAIP Issues**

### ***a. Prime Contractor Versus Subcontractor***

The questions of whether SAIP procurements should be made with prime or subcontractors and whether they should be on the same contract as production items or a separate concurrent contract elicited fairly polarized responses. Air Force offices were unanimous in the belief that SAIP should be restricted to prime contractors and that all requirements should be included on the production contract. Some respondents even felt that restricting SAIP to prime contractors was required by regulation. This belief, however, is inaccurate. Air Force Regulation 800-26 specifically requires contractors to identify items on the SAIP list that can be broken out to the actual manufacturer and to provide the contractor's

procurement schedule for SAIP [Ref. 19:p. 2]. Such a requirement would seem to imply that SAIP spares may be obtained from subcontractors.

Navy responses to the question were mixed and implied a greater degree of flexibility. The feeling was that each approach had benefits and costs and that the decision should be based on the imperatives of the contract at hand.

Contractors also felt ordering from the prime on the same contract as production items was the preferable approach to SAIP. All respondents generally offered the same factors for consideration in the decision:

- It is easier to coordinate the requirements through the prime.
- Purchasing through the prime is the best way to ensure effective configuration control.
- Placing the requirements on one contract reduces the administrative burden and cost.
- Purchasing through the prime mandates ILS participation by both industry and Government to separately manage SAIP spares.
- Purchasing through the prime ties everything together and holds the prime contractor responsible.
- Purchasing through the prime is the simplest, least expensive, and most direct way of contracting (least expensive here refers to the cost of placing and administering the contract, not the price of the contract).
- Purchasing through subcontractors will result in lower prices since prime contractors add-on charges will be avoided.
- Designs must be stable if SAIP purchases are to be made through subcontractors.

The differing attitudes on this issue between Navy and Air Force organizations is understandable when it is recalled that the Air Force limits application of SAIP to initial provisioning requirements. Under that circumstance, early in the system life cycle, designs tend to be unstable and the Government is usually in a sole source position.

*b. Timing and Coordination*

The research revealed that timing and coordination is an issue that is applicable primarily to replenishment SAIP requirements. The comment made time and again by individuals involved in the SAIP process at both NAVAIR and ASO was that they often "missed the window" on SAIP opportunities. This comment means that spares requirements were not determined early enough and communicated to NAVAIR, and/or contractors and vendors, in time to have the additional material requirements added to the contractor's procurement orders. Individuals at ASO tended to believe they did not get adequate and consistent notification of ordering windows and that investigating to determine if SAIP opportunities exist when procurement requests are being generated is too tedious a process. Contractors, on the other hand, believed that the Government received timely notification, but failed to act swiftly to take advantage of the opportunities.

This factor is of critical importance in SAIP savings. To achieve maximum benefit from economies of scale,



procurements must be consolidated not just in time to meet contractor production schedules, but to meet contractor material order release schedules [Ref. 29, 29]. In this way contractors get a cost benefit from larger material orders that can be passed on to the Government.

Much effort has been devoted to improving and systematizing the process by which weapons managers and item managers at ASO are notified about SAIP opportunities and ordering windows. Research on-site revealed that several parallel, concurrent approaches are being taken by differing offices within these two commands to that end. These separate approaches will be discussed in a following section on current processes.

### *c. Variations of the SAIP Technique*

In Chapter II, four possible variations of the SAIP technique were discussed. When questioned about which of the variations was preferred the vast majority of survey respondents chose the first variation: combining all requirements on one Government contract with the prime contractor. The rationale for this choice was the same discussed above with respect to ordering SAIP spares from prime contractors versus subcontractors: easier and less costly negotiation and administration, and better configuration control.

However, discussions held at ASO, NAVAIR and with several contractors indicated a great deal of interest in the

possibility of consolidating ASO spares procurements with other customer requirements in addition to NAVAIR's production requirements. "Other" customers would include other service production or spares purchases or possibly foreign military and even commercial sales. The consensus was that although such purchases would most likely not be on the same contract, concurrent timing of orders for the same part, or parts that required similar processes and materials, would still result in savings concomitant to larger production runs. This variation, though, would require an efficient means for contractors to routinely notify all potential customers of procurement order release dates for specific items. [Ref. 26 and Ref. 29, 29]

#### *d. Provisioning Versus Replenishment*

Responses to this issue were also polarized. Most respondents felt there was potential for generating SAIP savings on replenishment requirements. The Air Force, as stated earlier, does not attempt SAIP with replenishment actions. The prevalent attitude was that coordination and timing issues for replenishment actions were too difficult to overcome. They preferred to rely on competition and Breakout to generate savings on replenishment actions.

In marked contrast to the Air Force, ASO is interested in obtaining SAIP savings wherever possible, including replenishment requirements. At the same time,

officials at NAVAIR and ASO admit that the difficulties of trying to coordinate SAIP replenishment have hampered systematic consideration of SAIP in replenishment actions. [Ref. 26 and Ref. 29, 29]

Survey responses indicated that contractors generally felt the Government should try to apply SAIP to both types of requirements.

#### *e. Selection of SAIP Candidates*

All respondents agreed with the criteria for SAIP candidates provided by former DoD Instruction 4245.12 (Chapter II, section C.5.e). Most respondents suggested the additional criterion of design stability. Most also suggested that the technique should be restricted to high cost repairable items, although it could conceivably be applied to low cost consumable items as well. The implication was that the greater effort involved in coordinating a consolidated purchase action could best be justified by the higher payoff to be obtained from high cost items. Consumable items were likely to have a lower payoff, and be more subject to Breakout and competition as alternatives to SAIP. Most individuals at ASO also suggested that SAIP should be restricted to sole source procurements.

#### *f. SAIP Versus Competition and Breakout*

No one responding to this research project saw any conflict between the SAIP technique and competition or

Breakout. This view is based on the fact that competition and Breakout are required by law and SAIP is not. SAIP was most often seen as a tool that could be used to obtain savings when competition and Breakout were not feasible, that is, in a sole source situation.

## **C. THE ASO/NAVAIR SAIP PROCESSES**

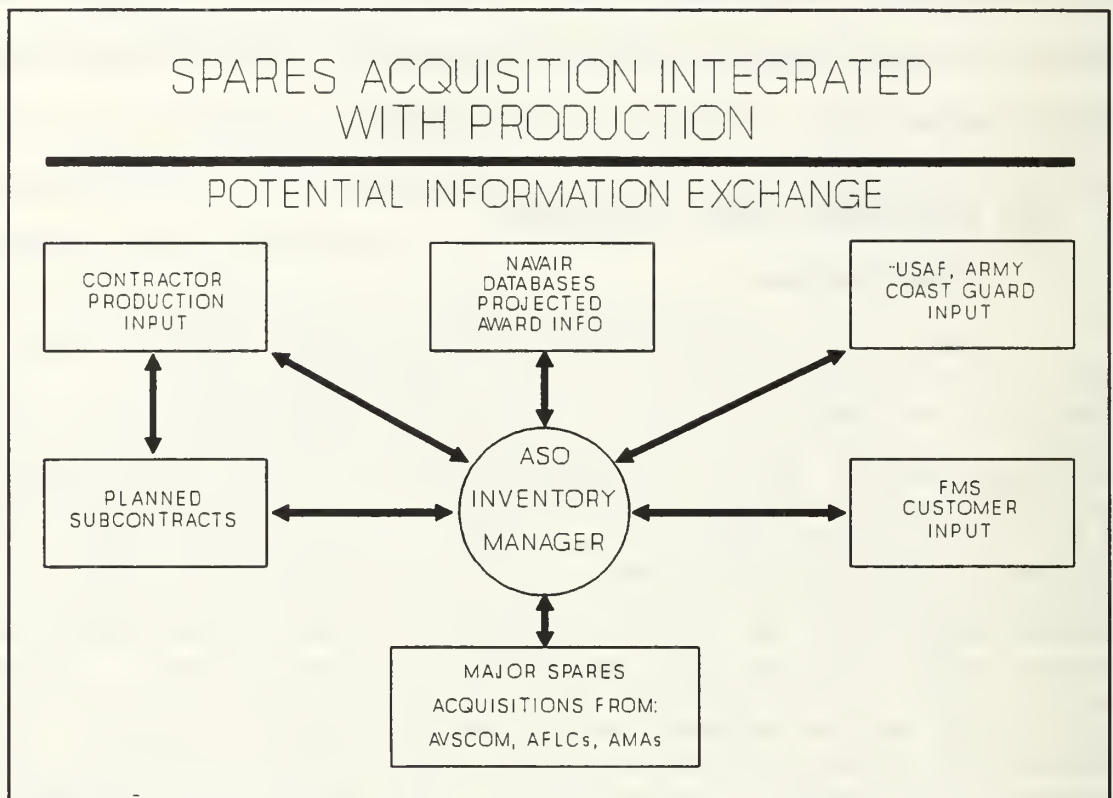
### **1. Introduction**

One of the objectives of the on-site research was to discover how ASO and NAVAIR currently implement the SAIP technique and to obtain recommendations from key individuals on how the process might be improved. It was found that four general processes are being followed to identify SAIP opportunities which overlap each other to varying degrees. These approaches can be categorized by which command initiates the process, the lines of communication, and the level of formality or regulation of the process. Before discussing these approaches, it will be helpful to place them in the context of ASO's overall SAIP philosophy.

ASO provided the chart below that illustrates the potential lines of communication for pursuing SAIP opportunities. The chart is important in that it emphasizes ASO's flexible approach to investigating various avenues to obtain SAIP savings. According to ASO, "SAIP is one of several techniques to be considered in the overall spares acquisition and logistical support process..., " which embraces a "...com-



mon sense approach to providing affordable support while maintaining weapon performance and safety." [Ref. 30] Quite



**Figure 3 SAIP Communication Paths** [Ref. 29 :p. 6]

simply, there are no predefined limits on how SAIP should be implemented. It is a technique that item managers are encouraged to apply to any procurement if there is an opportunity to do so and estimated savings make it worth the effort (usually a subjective decision).

In the interest of ensuring that SAIP is at least considered prior to a procurement action, item managers must tell a Requirements Review Board whether SAIP was considered for the procurement in question. Requirements Review Boards

are convened by the ASO Operations Directorate before execution of contract actions to determine if requirements have been calculated properly [Ref. 27:p. 1]. Item managers can resort to any one of the four approaches mentioned above to determine if a SAIP opportunity exists. These approaches include processes initiated by ASO and processes initiated by NAVAIR.

## **2. ASO Initiated Processes**

### ***a. The Informal Process***

Every weapon systems manager interviewed in the ASO Operations Directorate described a relatively unstructured process for initiating SAIP procurements. Weapon systems managers at ASO who are tasked to manage spares inventories for specific systems tend to stay in constant communication with either the NAVAIR program managers (PM) or assistant program managers for logistics (APML) with responsibility for those same systems. This constant communication allows managers from both commands to stay abreast of significant developments in the life cycle support of a system such as readiness issues, system modifications, and major end item or spares buys. Because of this close contact, weapon systems managers are usually aware of major, upcoming production contract awards, or lot deliveries, and APMLs are apt to be aware of major spares procurements. Major in this context may be taken to mean high dollar value buys for major system

components at the WRA or, possibly, SRA level. Such procurements are usually subject to a sole source situation. With PMAs/APMLs and weapons managers both being sensitive to program costs, it is natural to investigate the possibility of implementing SAIP in this situation. If a production contract award is pending and a major spares requirement exists, the ASO weapon systems manager may seek to pass his requirement to NAVAIR for inclusion in the production contract.

There are two major advantages to doing this from ASO's perspective. One obvious advantage is the assumed SAIP savings for both NAVAIR and ASO that will result from the effort. Another fortuitous consequence of such a transaction is that non-competitive contract actions will be removed from ASO's contract base, thus increasing their percentage of competitive contract awards. This is not a disadvantage for NAVAIR because NAVAIR's interest in competition occurs early in program life, so follow-on production contracts are invariably sole source<sup>5</sup>.

It is readily apparent that this process does not involve a systematic approach. Participants report that coordination of these actions is particularly difficult and

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<sup>5</sup>NAVAIR does have a component breakout program by which Contractor Furnished Equipment (CFE) is procured directly by the Government and provided to the contractor as Government Furnished Equipment (GFE). Components should be broken out if it will result in substantial savings, and the action will not jeopardize the quality, reliability, performance or timely delivery of the end item. [Ref. 31:p. 1]

time consuming and that the opportunities tend to be serendipitous [Ref. 29, 29]. Non-systematic and serendipitous though this process may be, it apparently is the most frequent route by which SAIP is employed. The research did not reveal a specific percentage of successful SAIP actions that followed this process, but most ASO weapon managers could not provide anecdotal evidence of any other process being employed.

***b. A More Systematic Process***

The ASO Acquisition Executive's Office has made some forays into a more systematic process to uncover SAIP opportunities. In this process, the Acquisition Executive's Office periodically queries NAVAIR's Procurement Request Management Information System (PRMIS) via modem and downloads information on open NAVAIR procurement actions to a PC in the Acquisition Executive's Office. The entire NAVAIR Contracts Division database is maintained on PRMIS, and the system provides a wealth of information with respect to pending procurement actions: system, contractor, contract type, responsible office, dollar value, etc. [Ref. 34:p. 20]. It does not, however provide information on individual contract line item numbers (CLINs).

The downloaded information is maintained in a smaller database in the Acquisition Executive's office. Listings are produced from this database and distributed to



weapon systems managers so they can investigate listed actions for SAIP opportunities.

Weapon systems managers questioned about the listings reported receiving them on a periodic basis, but were not able to identify any successful SAIP procurements that had resulted from this effort. The primary concern reported with the listings was that the information on them was not detailed enough to allow immediate identification of a SAIP candidate.

For example, the listings provide only nomenclatures for systems with pending procurement actions. No stock numbers or part numbers are provided, i.e., information that would be found in individual CLINs. Interested weapon systems managers or item managers would have to initiate telephone conversations with individual contract officers at NAVAIR to determine specific systems or components that were being ordered and then try to determine if ASO was in a buy position for any of those systems or subcomponents of those systems. The impression given to the researcher was that a top-down-breakdown analysis would have to be performed on each listed system before any effort could begin to match listed procurement actions to ASO's requirements.

Weapon systems managers saw no easy way to match this product to System Demand Reviews (SDR)<sup>6</sup> or stratifica-

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<sup>6</sup>The Supply Demand Review (SDR) is the automated requirements determination process used by ASO to develop procurement requirements. It is run quarterly. [Ref. 32:p. 1]

tion listings<sup>7</sup>. The concern was that efforts to do so would undoubtedly be very time consuming with no promise of a payoff.

### *c. A Formal Process*

ASO has a formal set of procedures that are to be followed once a SAIP opportunity has been identified for a given procurement action. The procedures are contained in OP Policy and Procedure Memo #76. This document primarily provides detailed internal procedures for executing a SAIP procurement. It covers routing of procurement requests, time frames for processing, and reporting requirements.

Only one paragraph is devoted to a procedure for identifying SAIP candidates. Inventory managers or equipment specialists are directed to request production procurement requirements lists from prime contractors or GFE production procurement requirements lists from NAVAIR. They are then to compute spares requirements for items on the lists and initiate procurement requests if appropriate. No weapon systems managers referred to this memo or its procedures when discussing SAIP transactions. Some mention was made of obtaining production procurement schedules from contractors,

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<sup>7</sup>Stratification listings are ASO's budgeting tool. They are based on the same parameters as those use for requirements determination (reorders), and they project future procurement and repair requirements on a line item basis [Ref. 33:p. 10]

but this was presented as an ad-hoc process, concomitant to the informal process discussed above. [Ref. 35:p. 2]

An interesting aspect of this document, is its mention of "reverse SAIP."

The REVERSE SAIP concept is a unique ASO approach intended to allow a prime contractor to combine spares with a production order and propose a unit price less than a stand alone spares proposal by an OEM. [Ref. 35:p. 1]

As understood by the researcher, reverse SAIP allows prime contractors to compete for a spares procurement with an original equipment manufacturer (OEM) in what would otherwise be a sole source environment. The prime, by combining the Government's spares requirement with his production order can achieve unit prices lower than the OEM can offer on a stand alone buy. The case offered as an example was one in which IBM had remaining inventory from a previous, large production buy that it was subsequently able to offer to the Government at a lower price than the OEM [Ref. 30]. It is interesting to note that this situation is very similar to the first McDonnell Aircraft SAIP offer to the Government on the F-15 program discussed in Chapter II.

### **3. NAVAIR Initiated Processes**

#### ***a. Draft Procurement Request (PR)***

A review of various ASO and NAVAIR internal memoranda and brief sheets on SAIP indicated that there was no systematic process for identifying SAIP opportunities prior to

1989. SAIP efforts before 1989 appear to have been restricted to the ad-hoc process previously discussed. In 1989, however, ASO and NAVAIR began efforts to develop a more systematic and formal process. In meetings conducted between the two commands on the SAIP issue, it was discovered that NAVAIR was routinely forwarding copies of draft RFPs to ASO so CDRL requirements could be reviewed. These RFPs were found to be quite complete, as they cited specific CLINs, and they seemed an ideal vehicle for notifying weapon systems managers at ASO of possible SAIP opportunities. Therefore, ASO and NAVAIR agreed that all draft RFPs sent to ASO would be routed to appropriate weapon systems managers so the CLINs could be reviewed for SAIP candidates. This practice has apparently been followed fairly consistently, since it was found that the ASO Operations Policy and Control Division (code 035) still receives the RFPs, attaches a cover memorandum to them and forwards them to weapon systems managers. [Ref. 36:p. 1]

The memorandum requests spares managers to review section "B" of the PR (Supplies or Services), which lists specific CLINS, and match them to their WRA and SRA requirements. If they discover SAIP opportunities, they are then supposed to initiate a request for consolidated procurement (RCP) and send it to NAVAIR. If they do not have requirements for any of the items listed in the PR, they are to return the cover memo to code 035 with a note stating that no procurement is to be made.



Discussions with weapon systems managers at ASO indicate that this process has also met with limited success. The primary complaint was that most draft RFPs are received too far in advance of projected order or delivery dates for item managers to accurately determine requirements. Again, this process offers no electronic interface to ASO's automated requirements determination process, so the manual screening process is still time consuming with a remote chance of payoff. The impression gained was that there was simply insufficient time available to devote to this sort of effort. The following quote from a July 1992 memo returned to code 035 illustrates the type of obstacles item managers face in pursuing this process:

ASO will not be able to exercise any procurements for SAIP opportunity due to 1) NAVAIR award date will be 10-15-92 and 2) ASO does not have any information which will enable us to know what to buy by 10-15-92.

We will keep in touch with NAVAIR when they release their SPARES order for SML buy-in and exercise our procurements. [Ref. 37:p. 1]

The NAVAIR SAIP Policy and Procedures Memorandum, which will be discussed in the following section, also comments on the limitations of this draft PR process:

2. The existing process provides for incorporation of interim and replenishment spares into the PR. Draft PRs are provided to the Navy Aviation Supply Office (ASO), Philadelphia, for incorporation of spares. This process, as it exists, has proved inadequate in responding to ASO demand, funding volatility, and limited opportunities for combined buys. [Appendix C: p.1]

In order to address these deficiencies, NAVAIR developed a new process that attempts a higher degree of systematization and more effective use of automated data processing capabilities. The following section discusses this process.

*b. Contractor Procurement Order Release Schedules*

As had been previously discussed, the key to obtaining SAIP savings is to consolidate spares requirements with production requirements early enough to get them included on contractor's material orders for the production contract. NAVAIR acknowledged shortcomings in the earlier SAIP process in this regard. NAVAIR also recognized that for the processes to be effective, the difficult step of matching ASO's requirements to contractor's productions procurement cycles would have to be facilitated. The NAVAIR Tactical Aircraft Contracts Division (Air-214) was given lead responsibilities for improving the process. After identifying the process shortcomings discussed above, Air-214 developed a prototype process that concentrated on timely determination and communication of contractor's procurement order release schedules, and that sought to take maximum advantage of automated data processing capabilities to perform the arduous screening and matching actions that had thus far hindered more effective SAIP implementation. [Ref. 29, 29]

The process prototyped by AIR-214 concentrates on matching ASO spares requirements with contractor annual procurement order release schedules rather than the NAVAIR fiscal year procurement cycle. Contractors are requested, by letter, to participate in the process by agreeing to notify the Government of their procurement order release schedules and to combine the Navy's requirements with their own to the extent allowable within their existing procurement systems.

If the prime contractor agrees to participate, all annual year procurement contracts with that contractor will be structured with a SAIP line item. The SAIP line item is structured as a PIO line item. A CDRL and data item description (DID DI-V-7200) are also included to task the contractor to provide his annual release schedule in the contractor's format but, ideally, a hard copy listing and floppy disk would be provided. When ASO receives the listing and disk, they can be matched to ASO's requirements. Weapon systems managers may upload the floppy disk listing to the ASO database to compare and match records. A stratified requirements listing may then be produced for any matches. The NAVAIR PCO, a DPRO ACO, or an ASO contracting officer may be designated as ordering officers. An important innovation in this process was an acknowledgement that ASO/NAVAIR coordination might not be necessary to achieve SAIP savings. Once contractors provided their procurement release dates to ASO, it might be possible for ASO to work directly with the contractor to consolidate require-

ments rather than trying to add their requirements to one of NAVAIR's contracts (ASO's desire to offload noncompetitive contract actions notwithstanding). The NAVAIR Operations and Procedures Memorandum which outlines this process is reproduced in Appendix C.

Clearly, this process is intended to directly address what appeared to be the key shortcomings of earlier processes. Extensive effort went into prototyping it. The Grumman corporation worked closely with NAVAIR to address contractor concerns and work the "bugs" out of the process. Concerns expressed by Grumman were that if contractors were not able to provide the listing in their own format, reformatting costs might result in unnecessary contract cost growth. The company also felt the language calling for the submission of contractor procurement schedules should be clarified to stress that the information provided was "planning" data and therefore subject to change. Finally, Grumman suggested that some "mutuality" might be included in the provisions, e.g., if contractors were notified when ASO was planning a large buy, contractors might find it beneficial to accelerate their purchases to be in synchronization with ASO. [Ref. 38:p. 1]

A review of several internal memorandums, facsimile transmittals, and e-mail transmissions between NAVAIR, ASO, Grumman, and McDonnell Douglas, indicated extensive coordination was still required to close on SAIP opportunities even with this more automated process. In one case listings



provided by the Government, were not in a useable form for the contractor (e.g., different part numbers) and required cross referencing by the contractor. In other cases (notably the E-2C program) simply matching up items, quantities, dates, and funding to meet contractor release dates was still a time consuming process requiring the involvement of higher level management (weapon systems managers vice item managers). The process does appear, though, to have achieved some measure of success. In 1989, NAVAIR and ASO reported \$200,000 in SAIP savings on a McDonnell Douglas contract and \$1,500,000 in SAIP savings on a contract with Grumman Aerospace Corporation [Ref. 39:p. 7].

#### **D. SUMMARY OF RESEARCH FINDINGS**

The research effort uncovered few solid statistics and limited archival data by which to analyze the SAIP technique. The data that were obtained, though (anecdotes, internal memorandums, survey and interview responses, and cost avoidance reports), provide ample information to analyze the SAIP technique with respect to Naval aviation and assess the benefits of the process, the degree of success achieved by the Naval Air community in realizing those benefits, circumstances under which the technique should be used, and processes for implementing it.

## V. ANALYSIS

### A. SAIP: IS THE DEFINITION ADEQUATE?

In the introduction to this paper, SAIP was identified as the implementation of a policy whereby spares are purchased concurrently with end item production. Chapter II provided a more formal definition taken from DoD Instruction 5000.1:

A procedure used to combine procurement of selected spares with procurement of identical items produced for installation on the primary system, subsystem, or equipment. [Ref. 1:p. 15-16]]

The Air Force provides still another variation on this same theme in AF Regulation 800-26:

A technique used to combine ordering and production of spares- (both initial and replenishment) with identical items produced for installation on the end item to be delivered to the user. [Ref. 19:p. 1]

All of these definitions would seem to limit the "SAIP" technique to procurement of spares concurrently with production of identical end items. However, the data obtained from the research effort suggests that such a definition might be unnecessarily restrictive.

In ASO's chart depicting potential information exchange paths for SAIP opportunities, reproduced in Figure 3 in Chapter IV, major spares acquisitions from AVSCOM and

AFLCs/AMAs are offered as SAIP opportunities. Such acquisitions are certainly not for "end item production." Another finding of the research, presented in the section on variations of the SAIP technique, was that many research participants felt SAIP savings concomitant to larger production runs could be obtained if purchases were combined, not just for identical items, but for items requiring similar materials and processes. This notion is supported by the finding that the largest SAIP savings result from the price breaks that contractors receive from their suppliers for placing larger material orders and from avoiding redundant production setup costs. To achieve savings, then, a SAIP candidate need not be in the identical configuration as other items being produced as long as it requires similar materials and fabrication processes.

Clearly, ASO does not want to limit consideration of the SAIP technique to the boundaries suggested either by the official definition of the term or the term itself: "Spares Acquisition Integrated with Production." Spares do not necessarily have to be in the identical configuration as production items, and the spares procurement does not necessarily have to be combined with a procurement for production end items. From this perspective, SAIP can be considered a technique for obtaining economies of scale in spares acquisition by consolidating one organization's spares procurement with some other customers' procurement for items that require

the same, or similar, materials and fabrication processes. "Other customers" could be expanded to include other services, other governments, or even commercial customers. Aircraft such as C-130s, C-9s, and H-1s would appear to have a very large customer base and, therefore, SAIP potential. Caution must be taken, though, with this line of reasoning. Just because some other party owns the same piece of equipment does not mean that SAIP procurements must be pursued every time a spare is purchased. There are other factors to be considered such as the amount of effort required to coordinate the procurement and whether the payoff will justify the effort. Everyone living on a neighborhood street could form a coop to buy light bulbs at the same time and undoubtedly receive a price break on the large, combined purchase quantity. But it would hardly seem worth the effort.

The reason for concern with the definition of SAIP, is that the definition of the technique, if unnecessarily restrictive, may unnecessarily restrict consideration of alternatives for implementing the technique and achieving savings.

#### **B. IS SAIP WORTH THE EFFORT?**

One fact confirmed by the research is that execution of the simple SAIP concept can be a very complicated and laborious experience. Regardless of the process employed, searching for SAIP opportunities and closing on those opportunities



invariably requires hours of additional effort unique to the SAIP process. There have been no statistical comparisons of procurement lead time on SAIP actions as opposed to non-SAIP actions, and such studies were beyond the scope of this project. However, there was certainly no evidence to suggest that a SAIP procurement would require less time than a non-SAIP procurement, and there is nothing in the process that allows any normal contracting steps to be skipped. Despite the fact that NAVAIR has historically been responsible for negotiating and awarding SAIP contracts, ASO's involvement has not ceased with the passing of RCPs to a NAVAIR contracting officer. When spares and production requirements are combined onto one contract, ASO and NAVAIR must coordinate closely on timing, quantity, and funding issues. Because of the dynamic nature of ASO's requirements, such coordination efforts must continue right up to contract award. These efforts on historical SAIP transactions have been intense and protracted affairs, involving relatively high management levels (weapon systems managers, APMLs, highly placed contractor executives, etc.). Though the study was not able to quantify them, the financial costs of such efforts are probably significant. There are costs other than financial, though, that must be considered in the SAIP equation.

Survey and interview responses indicate that the cost of implementing the SAIP technique in terms of frustration and discouragement of participants in the process is high. A few

respondents even indicated a hesitancy to be involved in the process again. Despite this disenchantment with the process, all believed that SAIP efforts had resulted in substantial cost savings, and that efforts should continue to implement the SAIP technique wherever possible.

The NAVSUP savings data presented in Table II also indicate that, from a cost perspective, SAIP is worth the effort involved in its implementation. \$153 million in savings over five years is a significant amount even if it is just a "ballpark" figure. This is especially true when it is considered that research respondents generally stated that they tried to keep their estimates "conservative."

The research findings were less clear-cut on the other presumed benefits of SAIP. The rationale offered for SAIP ensuring better configuration control depends on SAIP actions being executed with the prime contractor. There is nothing in the SAIP model that requires that the technique be executed with the prime, nor is there any prohibition against executing non-SAIP actions with the prime if configuration control is the overriding objective. One could argue, therefore, that configuration control is an acquisition objective that may be achieved with or without implementation of the SAIP technique. It is dependent on contractual language tasking the prime contractor to ensure spares are delivered in an appropriate configuration, not on placing a spares buy concurrently with a production buy.

As with configuration control, the study provided no evidence with which to assess the affect of SAIP on readiness. Although the theoretical rationale for SAIP's effect on increasing readiness is compelling, one could surmise that such an effect is most likely due to ordering spares earlier in the provisioning process than normal, rather than combining a spares order with a production order to achieve larger production runs. Could not the same result be achieved by ordering spares earlier without regard to concurrent timing of production orders? The SAIP model implies placing spares procurements concurrently with end item production runs to achieve economies of scale. It does not, however, dictate which production lot a spares buy must be combined with. Executing a SAIP action on later production lots would not seem to offer the readiness benefits suggested by the theoretical model. The obsolescence and overprocurement risks (costs) discussed in the theoretical model may be dispatched with the same line of reasoning, i.e., they are risks that are related more to timing of initial spares buys with respect to the life cycle of the system rather than consolidating spares buys with a particular production lot.

The point to be made, based on the research data and this analysis of the costs and benefits, is that SAIP does appear to be "worth the effort" when estimated financial savings are compared to the costs or risks of SAIP. One should exercise caution, however, in imputing any benefits to SAIP other than

economies of scale that result from the consolidation of requirements.

Unfortunately, the consideration of potential SAIP benefits may have less bearing on how aggressively spares purchasers seek to implement the technique, than the "pain" involved in the process of implementing it. SAIP participants can be compared to a woman in a hospital delivery room who loves her new-born baby but never wants to give birth again. If they are to remain excited about the process, ways must be found to make it less painful.

#### **C. DOES SAIP CONFLICT WITH OTHER PROCUREMENT OBJECTIVES?**

SAIP is not required by law and competition is. That simple fact would seem to resolve any concern about whether there is any conflict between the SAIP technique and competition or Breakout. If it was obvious that the prime contractor could offer SAIP savings that resulted in a lower price than any potential competitor could offer, then a J&A could be obtained to authorize the sole source procurement. This scenario raises the delicate ethical question, though, of how the Government could come by such information in a competitive environment. It seems more likely that a contractor with knowledge of the Government's required delivery date and other customer requirements, would naturally plan to consolidate both orders and obtain economies of scale in order to offer a more competitive price. Maybe this phenomenon can be called



Auto-SAIP -- the Government benefits from SAIP without specifically addressing SAIP in the RFP or bid request.

Breakout would appear to be less of a problem for SAIP than a competitive environment. The purpose of Breakout is to create a competitive environment to save money. However, if estimated SAIP savings are substantial, an appropriate decision might be to delay Breakout. A prime contractor's SAIP offer in this instance, though, would have to be reviewed carefully to ensure that low prices actually represent SAIP savings rather than a prime contractor attempt to hinder breakout.

Another point of consideration is that savings from competition and breakout reported to NAVSUP under the BOSS program far exceed any savings reported from SAIP. This would seem to indicate that a wise approach would be to always seek competition and/or Breakout and reserve SAIP consideration for non-competitive procurements.

#### **D. WHAT WORKS AND WHAT DOESN'T?**

##### **1. Comparison of Processes**

It has been suggested, that, unless the SAIP process is "easy," weapon systems managers will not routinely check for SAIP opportunities. The preceding chapter discussed several different approaches that NAVAIR and ASO have taken to implementing SAIP. These approaches have yielded varying levels of success and have been embraced by participants with

varying levels of enthusiasm. Comparing and contrasting the various processes is helpful in identifying which features make implementation of the SAIP technique "easy" and which features tend to make implementation more difficult.

The ad-hoc process, although requiring extensive coordination, appears to have several advantages with respect to ease of implementation. To start with, weapon systems managers or item managers are already aware of the requirement to procure a particular spare (most likely as a result of the SDR process). The known requirement (and presumably, its high money value) is what motivates them to initiate the process in the first place. Additionally, having maintained liaison with the NAVAIR APML, they are generally aware of pending production procurements, and they already have a NAVAIR point of contact with which to investigate SAIP potential. Contrast this situation with both the draft RFP and PRIMIS database extract process.

In both of these processes, weapon systems managers are provided with products to be used for investigating SAIP opportunities before any spares requirement has been identified. They must then investigate to see which items NAVAIR is procuring, determine if a spares requirement exists for those same items, and if so, take steps to establish liaison with an appropriate NAVAIR point of contact to coordinate the SAIP procurement. Once liaison is established additional efforts must be made to obtain procurement order release schedules

from the contractor, i.e., determine the SAIP ordering window. This front end screening effort appears to be minimized by the ad-hoc process with the possible exception of determining SAIP ordering windows.

The NAVAIR procurement order release schedule process, if implemented as conceived, may also offer advantages in ease of implementation. If procurement order release schedules provided by contractors are electronically matched to the ASO database to produce stratified listings of spares with projected replenishment requirements, the step of investigating to see if a requirement exists has already been accomplished by the time the stratified listing and procurement order release schedules are dropped on a manager's desk. Further coordination with NAVAIR may be unnecessary, since the NAVAIR production contract should already contain a SAIP/PIO line that authorizes ASO to place SAIP orders against the contract. Finally, ASO already has information on SAIP ordering windows. Theoretically, ASO need only communicate with the contractor to confirm the windows and coordinate timing of the buy. Confirmation of the SAIP window would always be required since procurement order release schedules provided by contractors are planning data which are subject to change.

The procurement order release schedule process is young. Initial efforts to prototype it (E-2C and F-18 programs) still required extensive coordination between ASO,

the contractor and NAVAIR. NAVAIR involvement may be explained by the fact that it was a NAVAIR process that was being prototyped and fundamental questions of order release schedule format and how to best match the listings to ASO's requirements had to be resolved. It seems likely that further prototyping efforts would result in a consensus on the best resolution to these issues and greater systematization of this phase of the process.

What is clearly disagreeable to weapon systems managers is any process that involves time consuming efforts beyond normal automated SDR processes to identify SAIP candidates and opportunities. To date, the SAIP technique has not interfaced very well with the automated processes that ASO relies upon for determining the timing and quantity of spares procurements, and, to varying degrees, the execution of those procurements. As discussed in the previous chapter, this was a common concern of research participants when discussing the short comings of existing SAIP processes. Obviously, how well a particular process addresses this issue has a bearing on its palatability and likelihood of use.

## **2. Questions of Funding and Changing Requirements**

None of the current processes address two issues that have proven particularly troublesome in implementing the SAIP technique: availability of funding and changing requirements.



The data presented in the previous chapter bear witness to how these issues can complicate and impede implementation of SAIP.

Although availability of funding is not a problem unique to SAIP its impact on a SAIP procurement may be greater than other procurements. A SAIP procurement is extremely sensitive to timing. Therefore, if funding is delayed, SAIP windows may be missed and opportunities lost. When funding is finally made available the spare will still be procured, but at higher cost than if the window is met. Moreover, delays in funding have a ripple affect that may affect the price other customers (NAVAIR) pay for a part. If a contractor agrees to a price based on a consolidated order quantity and ASO is subsequently not able to pay for an order, then, depending on the contract structure and stage of negotiations, either other customers must pay more, or the contractor or one of the customers is saddled with a termination liability. Availability of funding is critical to successful implementation of the SAIP technique and willingness of participants to enter into future SAIP arrangements.

Stability of requirements may be the greatest difficulty and barrier to SAIP implementation. The experiences related by research respondents reveal that havoc reigns when pricing arrangements contingent upon consolidation of two customer's orders are undermined by changing quantity requirements on the part of one or more customers. The affect on the contract is the same as funding volatility. The problem of

changing quantity requirements, though, may be more intractable than funding volatility.

Funding is always available. Where it is applied is a matter of priority. Availability and stability of funding for SAIP transactions, therefore, appears to be a matter of management prerogative addressable within existing ASO management structures and processes. It is, in short, within ASO's current span of control. The same cannot be said for the stability of quantity requirements.

As discussed in the preceding chapters of this study, spares quantity determination is dependent on a number of factors; some within ASO's control and some not. Factors within ASO's control include EOQ model factors such as endurance level/stockage objective and reorder point, and decisions regarding quantity adjustment or timing of replenishment actions (e.g., advancing\delaying them or changing quantities in response to funding priorities or SAIP opportunities). However, ASO does not control system demand. It has already been pointed out that demand can fluctuate in response to changing operational tempo or environment, inventory adjustments, ECPs, seasonal demand, etc. All of these factors are beyond ASO's immediate control. Common sense would lead to the conclusion, that the longer a part is ordered before projected need, the greater the chance that changing demand will drive a change in the required quantity. If fluctuating demand results in an increased quantity

requirement, it is not likely to have a negative impact on a SAIP transaction, but as discussed above, a reduced quantity will almost certainly have a negative impact on a SAIP transaction.

The "wise" decision in such circumstances might be to maintain the original SAIP order quantity and temporarily exceed system stockage objectives with less expensive parts. However, pressure from external agencies exercising oversight of ASO operations can make such a decision politically untenable or, at least, uncomfortable. That is, a weapon systems manager might choose to spend more money for a part rather than be taken to task by GAO for ordering excess quantities. As Dr. Perry pointed out, current ICP EOQ models do not make provision for flexible stockage objectives or a range of objectives based on varying price levels.

If a SAIP procurement is to be executed smoothly and successfully, individual customers must not reduce order quantities after a price has been agreed upon. Even if a particular SAIP action survives such a perturbation, it injects difficulty and "pain" into the transaction that will discourage participants from seeking to enter into future SAIP arrangements. Unfortunately, the inability of current systems to accommodate SAIP ordering windows by computing stable replenishment requirements before system inventories are depleted to established reorder points may stand as an

institutional barrier to broader application of the SAIP technique.

#### **E. WHAT MORE CAN BE DONE?**

With consideration of what has and has not worked well in SAIP implementation, effort can be directed to developing an improved transactional model that will encourage more frequent consideration of SAIP. Such a model should simplify the process of identifying SAIP candidates and coordinating the timing and execution of the purchase action. Additionally, in order to ensure that as many opportunities as possible are considered, the model should not limit consideration of SAIP to production end items or to particular customers.

The procurement order release scheduled process modeled by NAVAIR seeks to achieve many of these goals. The process provides for up-front identification of procurement order release schedules, it seeks to take advantage of existing ADP capabilities to perform initial screening steps, and it provides an existing contractual instrument against which to place SAIP orders which should expedite the process. However, apparently in deference to contractor concerns, it does not dictate a specific format for procurement release order schedules, and it limits SAIP actions to current NAVAIR contractors. The NAVAIR process does, though, provide an excellent basis for developing a more systematic ASO model.



Despite contractor's concerns about program cost growth, allowing contractors to submit procurement order release schedules if their own format may place some undesirable constraints on the process. If the process is to be "systematized," input data should be provided in a standardized format. For instance, if procurement release order schedules are to be electronically matched to ASO's database on a routine basis, ASO ADP system managers would most likely choose to rely on a utility program, possibly locally developed, to match input data to the ASO databases such as the stratification file and files of in process procurement actions. Such a utility program would require input data to be in a consistent, standardized format. If data was not received from contractors in that format, effort would have to be expended to reformat it (hopefully, it would contain all required data elements), before a match could be processed. [Ref. 40]

Additionally, the Navy is rapidly embracing electronic data interchange (EDI) as a means to improve quality and reduce the cost of operations [Ref. 41:p. 1-1]. While exchanging floppy discs with procurement release schedule data might be desirable for prototyping this SAIP process, it would seem wise to take advantage of EDI capabilities extant at both ASO and contractor's facilities to pass this sort of data in the future. Once established, an EDI route for exchanging this information would lead to greater systematization and

speed the process, since it would reduce "off-line" manipulation and reformatting of the data . Conversations with the NAVSUP EDI Program Management Office indicate that the minimal amount of information required for this type of matching process might be easily accommodated by modifying an existing EDI transaction set [Ref. 42]. Which transaction set would be the most appropriate can best be determined between NAVSUP and ASO EDI managers once the matching process has been successfully prototyped. Taking advantage of EDI, though, obviously requires a consistent data format.

Including a CDRL and DID specifying the data format and exchange medium in any contract with a SAIP clause, and paying a fair price for this deliverable, would probably overcome contractor hesitancy to provide the data. Contract language, though, would most likely have to acknowledge that such data was planning data and subject to change. Conversations with one contractor that participated extensively in prototyping the NAVAIR process indicated that they would be receptive to this approach.

The NAVAIR provision allowing ASO to place SAIP orders directly with the contractor against a NAVAIR contract tends to confirm the notion that coordination with the contractor and his procurement order release dates, rather than coordination with NAVAIR, is the key to a successful SAIP effort. The next logical step along this line of reasoning would seem to be that it should not be necessary to rely on a NAVAIR

contract with a SAIP clause to execute a SAIP transaction. If ASO BOA's and/or long term contracts contained a SAIP clause similar to that developed by NAVAIR, ASO could conceivably expand the potential contractor base for SAIP. Including the SAIP clause in ASO contractual instruments might also help to clarify the issue of termination liability.

If ASO places a SAIP order against a NAVAIR contract and a price is negotiated based on the resulting larger production quantity, a subsequent cancellation by ASO may result in NAVAIR incurring the termination liability or, at least, in protracted "negotiations" between NAVAIR and ASO over the liability. If a contractor voluntarily priced an order based on a larger quantity, and ASO subsequently canceled, then the contractor would be left with the liability. On the other hand, a SAIP clause in ASO's BOA's or contracts stating that the pricing methodology was contingent on larger production runs as a result of ASO meeting SAIP windows specified by the contractor would seem to place termination liability squarely on ASO's shoulders. The advantage of this situation, is that the reduced risk for both the contractor and NAVAIR (or some other customer) might encourage more willing participation in the SAIP process.

This model allows ASO to execute SAIP procurements without the requirement for coordination with NAVAIR. It does not, however, preclude coordination with NAVAIR if other considerations, such as reducing the percentage of non-competitive

contract actions, make it desirable to consolidate requirements on one contract. Also, this model is not expected to supplant the ad-hoc process. Weapon systems managers and item managers interested in providing optimal support for their systems will continue to maintain a close liaison with their APML counterparts and "serendipitous" SAIP opportunities will continue to present themselves. Since these opportunities are apt to be for the largest, high money value items that receive special attention, it may be that the greatest SAIP payoffs will always arise as a result of the ad-hoc process.



## **VI. CONCLUSIONS AND RECOMMENDATIONS**

The preceding chapter analyzed the data obtained from the research effort with respect to Naval aviation and the issues discussed in Chapter III (Background). With that analysis completed, this chapter will present some specific conclusions on SAIP as it applies to Naval aviation and some recommendations on application of the technique.

### **A. CONCLUSIONS**

#### **1. SAIP is a Valid Technique**

The first conclusion to be drawn from this research is that SAIP is a valid technique for saving money in Naval aviation spares acquisition. Whether relying on attempts to estimate savings or "taking it on faith" that the technique must generate savings, this was the one point of nearly universal agreement in this research effort.

Savings are generated by economies of scale resulting from larger production runs for a given item. These economies of scale include learning curve effects, savings from larger contractor material orders, and allocating overhead costs over a larger production base. The most substantial savings are generated when orders can be combined early enough for contractors to include them on their material orders. Other savings may result from avoiding redundant setup costs and

reduced contract administration costs (in the latter case, only if orders are combined on one contract).

## **2. Lower Unit Price is the Only Promise**

Though other benefits have been postulated for the SAIP concept, there is no clear evidence or unassailable rationale to support such claims. The SAIP concept was originated in the interest of saving money, and organizations considering the SAIP technique, should do so only if achieving price savings is their primary goal. Configuration control, readiness, and price visibility are goals that can be achieved with or without a SAIP pricing agreement as long as they are addressed with appropriate contractual tasking.

## **3. The Current Definition is Too Narrow**

Existing definitions of SAIP are too narrow in their characterization of the technique. The operative mechanism for achieving the only proper goal of SAIP: cost/unit price reduction, is the economies of scale which result from contemporaneous placement of two or more customer orders with a given supplier. Integrating a spares order with a production order for an identical end item is only one of a number of options that may be pursued to that same end. A definition that ties such savings to production end items only, may implicitly limit consideration of a larger universe of alternatives such as consolidating spares orders with other customers' spares orders, or other customers' orders for items

that require similar materials or processes. The term "Spares Acquisition Integrated with Production," is, itself, an obstacle to an appropriate characterization of this savings technique. SPCC's term for the process, Timely Spares Provisioning (TSP), may be an improvement over SAIP, but it is not very descriptive of the process. A term such as Concurrent Customer Contracting (CCC or C<sup>3</sup>), on the other hand, would not prejudice a definition that properly characterizes the process: A procurement technique for achieving unit price reductions which emphasizes placing orders concurrently with other customers, for items which require the same, or similar, materials or processes, to achieve larger production runs and economies of scale.

Although most C<sup>3</sup> ASO procurements will most likely be executed concurrently with NAVAIR production requirements, a revised definition might foster broader consideration of alternatives.

#### **4. There is No Conflict With Other Procurement Objectives**

As defined in this thesis, the C<sup>3</sup> technique does not conflict with other procurement objectives. Placing orders concurrently with other customers to achieve larger production lots does not prohibit competition or breakout. However, C<sup>3</sup> is most appropriate, and will normally be used, in situations where competition cannot be obtained. Additionally, the intricacy and sensitivity of the competitive award process

may, in fact, make it unwise to attempt to implement C<sup>3</sup> in any such procurement action. Finally, in those rare instances where estimated C<sup>3</sup> savings far outweigh estimated savings from competition, a J&A should resolve any possible conflict.

#### **5. Potential Exists for Wider Application and Savings**

A potential exists for wider application of the C<sup>3</sup> technique. This conclusion is not based on a discovery of untapped C<sup>3</sup> sources. A search for such opportunities was beyond the scope of this project. Rather, this conclusion is based on a finding that existing C<sup>3</sup> processes discussed in this thesis are limited in their ability to uncover such opportunities. The possibility of untapped opportunities simply cannot be rejected until a more systematic, and less burdensome process is developed for exploring C<sup>3</sup> opportunities. This conclusion is also consistent with statements made by research respondents in both Government and industry that many C<sup>3</sup> opportunities are missed.

#### **6. Current Processes Limit Consideration of Options**

Analysis of the data obtained during this research effort makes it clear that current processes limit consideration of options because:

- They are time consuming, difficult, and frustrating to coordinate thereby discouraging a routine search for and consideration of C<sup>3</sup> options.
- They do not provide a routine and systematic mechanism for contractors to notify the Government of C<sup>3</sup> opportunities.



- They do not address the problem of computing reliable spares requirement quantities before inventories are depleted to the reorder point and item managers are notified by a SDR.

Modifications to existing processes may mitigate some of these shortcomings, but no process is likely to eliminate them. More flexible EOQ models may allow easier computation of required quantities and adjusted inventory stockage objectives based on contractor price breaks for various quantity ranges. However, contractor's procurement order release dates will always be subject to change, and demand for spares will continue to fluctuate requiring customers to adjust their quantities or drop the requirement entirely. Concurrent timing of procurements, therefore, will always require an extra measure of effort and coordination.

## **B. ANSWERS TO RESEARCH QUESTIONS**

Base on the background study, research data, and analysis the research questions posed at the beginning of the study may now be answered. The subsidiary questions will be answered first followed by the primary research question.

### **1. Subsidiary Question No. 1**

What is the SAIP concept and what are the presumed benefits of the concept?

SAIP or, preferably, Concurrent Customer Contracting, is a procurement technique for achieving unit price reductions which emphasizes placing orders concurrently with other

customers, for items which require the same, or similar, materials or processes, in order to achieve larger production runs and economies of scale.

The primary benefit of the process is the opportunity to obtain substantial price savings, particularly for items with limited competitive potential. Other benefits, such as improved configuration control, and reduced administrative burden may be concomitant to the technique depending on contract methodology and language, but these benefits cannot be assured in the absence of specific actions, beyond concurrent order placement, to achieve those benefits.

## **2. Subsidiary Question No. 2**

To what extent have the presumed benefits of the SAIP concept been realized in historical application of the concept?

The primary benefit of unit price reduction has been realized to some extent every time the technique has been employed. This statement is based on historical estimates of  $C^3$  savings reported to NAVSUP and the universally accepted theorem that larger production runs invariably return economies to scale which result in unit cost reductions. Though not always quantifiable,  $C^3$  savings are an "article of faith."

## **3. Subsidiary Question No. 3**

What factors have been critical to the success or failure of SAIP?

Factors critical to success of the technique include knowledge of other customer purchases or contractors' procurement order release schedules, timing of orders to meet those procurement order release schedules, the ability to determine stable required spares quantities, and availability of funding. Factors likely to result in failure are inability to place orders early enough to meet procurement order release dates, unstable requirements, lack of funding, and inefficient, unwieldy processes that discourage investigation of C<sup>3</sup> opportunities.

#### **4. Subsidiary Question No. 4**

What are the key issues that must be addressed or resolved in applying the SAIP concept to spares procurement for Naval aviation weapon systems?

The key issues that must be addressed or resolved include establishing appropriate selection criteria for C<sup>3</sup> candidates, developing processes that facilitate the search for C<sup>3</sup> opportunities and integrating those processes into standard automated inventory management systems, and establishing contractual vehicles that allow rapid exploitation of C<sup>3</sup> opportunities when they arise. Developing more flexible EOQ models, though not critical to applying C<sup>3</sup> techniques, would also facilitate the process and possibly broaden opportunities by allowing adjustment of inventory stockage objectives to take full advantage of price/quantity breaks.

## **5. Subsidiary Question No. 5**

To what extent should the SAIP concept be applied to spares procurement for Naval aviation weapon systems and how can it best be implemented to optimize program results?

Concurrent Customer Contracting techniques should be applied to Naval aviation weapon systems whenever a non-competitive contracting environment exists, the estimated extended money value of the requirement is relatively large, and C<sup>3</sup> opportunities can be identified. System demand for the C<sup>3</sup> candidate should be stable, and funding should be assured.

The technique can best be implemented within a process that emphasizes coordination with the contractor rather than the contractor's other customers. The contractor should notify the Government of his C<sup>3</sup> windows, preferably via EDI processes. The Government should, in turn, rely on automated processes to the maximum extent possible to accomplish the time consuming front-end screening efforts required to determine that a spares requirement exists and that an order may be placed in time to meet the C<sup>3</sup> window.

## **6. Primary Research Question**

What are the essential characteristics of the Spares Acquisition Integrated with Production (SAIP) concept and what factors are critical to successful application of the concept to spares procurement for Naval aviation weapon systems?



The essential characteristics of the SAIP concept are concurrent placement of orders by two or more customers in a non-competitive environment for items requiring similar materials or processes in order to achieve larger production runs and economies of scale. SAIP is better characterized as a Concurrent Customer Contracting technique.

The factors critical to successful application of the of the technique are efficient contractor/Government communication channels and a cooperative environment that promote timely identification of C<sup>3</sup> opportunities and rapid exploitation of those opportunities. Item configuration, demand, and funding must all be stable.

## **C. RECOMMENDATIONS**

### **1. A New Term and A New Definition**

The Navy and DoD should adopt a more accurate and descriptive term for the "SAIP" technique and a definition that encourages broader consideration of savings alternatives. Concurrent Customer Contracting (C<sup>3</sup>) is offered as an alternative term with the following definition.

Concurrent Customer Contracting: A procurement technique for achieving unit price reductions which emphasizes placing orders concurrently with other customers, for items which require the same, or similar, materials or processes, in order to achieve larger production runs and economies of scale.

## 2. A Model for More Systematic Application

### *a. General Recommendation*

It is recommended that the Aviation Supply Office prototype a modified C<sup>3</sup> process to address the limitations of the current processes. The prototype process should make maximum use of available technology to reduce the level of effort involved in searching for C<sup>3</sup> opportunities. Specifically, ASO should:

- Build on the process already prototyped between NAVAIR, ASO and contractors as reflected in NAVAIR Air-02 Policy and Procedures Memorandum #150A (Appendix C).
- Incorporate C<sup>3</sup> clauses in BOAs and long term contracts which request contractors to provide procurement order release schedules on a periodic basis and in a specified format.
- Emphasize use of EDI for transmission of contractor procurement order release schedules to ASO.
- Rely on an automated, front-end screening process at ASO to match contractor procurement schedules to the ASO database.
- Rely on stratification listings of matched items that meet additional estimated total cost and projected purchase date parameters specified by ASO. These additional screening parameters will serve to reduce the candidate list to manageable proportions and restrict it to items likely to have the greatest payoff (e.g., starting at total estimated dollar value equal to or greater than \$500K).
- Encourage contractors to provide procurement order release schedules for any customer's requirements, rather than just NAVAIR production contracts.

### *b. Building on the NAVAIR Process*

As discussed previously, the NAVAIR model provides a good starting point for developing a more systematic process, but modifications should be made to the NAVAIR model to facilitate automated screening for C<sup>3</sup> candidates. A standard format should be developed for contractors to use in notifying ASO of procurement order release dates. At a minimum the contractor should provide NSNs (or FSCM and part number) of production items for which material orders are planned during the current fiscal year, the dates by which the contractor must have ASO's requirements for those NSNs (or items that require similar materials or processes<sup>8</sup>), and the system or next higher assembly for which the item is being produced. DID DI-V-7200 referenced in the NAVAIR model already exists to provide this type of information for SAIP transactions, but it does not specify an electronic format. DI-V-7200 does, though, rely on the LSAR format for providing SAIP information, and ASO is currently involved in efforts to specify an EDI transaction set for exchanging LSA information with contractors [Ref. 41:p. 3-4]. It is recommended that, since LSAR data provides the information required for consideration of C<sup>3</sup> candidates, any LSA EDI transaction set be

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<sup>8</sup>Contractors might be in a better position than ASO to determine which ASO managed items require similar materials or processes. If concurrent production of such items would result in cost savings, contractors could seize the marketing opportunity to offer such items on the C<sup>3</sup> list provided to ASO.

developed with consideration for its optional use as a means of notifying the government of C<sup>3</sup> ordering windows.

Besides the minimal information discussed above, ASO could also request that contractors identify the contracting office and contract number for which production is planned. This information would allow ASO to decide whether to coordinate directly with the contractor or with the other ordering office to execute a concurrent order if it is determined that a C<sup>3</sup> procurement would be beneficial.

### *c. Incorporate C<sup>3</sup> Clauses in ASO Contracts*

Incorporating C<sup>3</sup> clauses in BOAs and long term contracts, would, as previously discussed, allow ASO to rapidly exploit C<sup>3</sup> opportunities by coordinating directly with the contractor rather than another Government contracting office. C<sup>3</sup> clauses should state that the contractor agrees to combine material orders to achieve economic order quantities whenever ASO meets C<sup>3</sup> ordering windows provided by the contractor and that savings resulting from the economic order quantities will be reflected in the price of the order. If prices have already been definitized in the BOAs or contracts, SAIP clauses should contain, or refer to, an agreed upon discount schedule based on various quantity breaks. Quantity/price breaks might be reflected in the C<sup>3</sup> ordering window lists (procurement order release dates) provided by contractors (LSAR format) or in the contract CLINs for specific



items. However, the C<sup>3</sup> clause should make it clear that the sum of all concurrent customer orders, not just ASO's order, will be used for determining the quantity break and appropriate price.

C<sup>3</sup> clauses should require contractors to provide C<sup>3</sup> ordering window lists on a periodic basis. The frequency of submission could be a topic of negotiation, but twice a year, in time to allow concurrent processing with ASO's requirements stratification, would seem to be an appropriate schedule. C<sup>3</sup> clauses should also acknowledge that the C<sup>3</sup> ordering window lists are planning data only and that they must be verified by the ordering officer (PCO or ACO) prior to order placement.

*d. Emphasize Use of EDI.*

Although this process may be prototyped with a few contractors using hard-copy listings or floppy disks, the ultimate goal should be to rely on EDI for the transmission of C<sup>3</sup> ordering window lists. Relying on EDI will ensure that this "systematized" process will be compliant with the intent of DMRD 941: acceleration of DoD's use of EDI [Ref. 41:p. 1-1]. Relying on EDI will also encourage refinement of the process to use existing contractor/government EDI systems and transaction sets and thereby avoid burdening the contractor with developing and maintaining a separate system for gathering and transmitting C<sup>3</sup> data to ASO. Finally, as stated above, relying on EDI will ensure that information provided by

contractors will be in a standard, electronic format that will facilitate automated, front-end screening efforts at ASO.

*e. Rely on an Automated, Front-End Screening Process*

Providing C<sup>3</sup> ordering window listings to weapon systems managers or item managers without further refinement of the lists will not encourage systematic consideration of C<sup>3</sup>. ASO should take advantage of automated data processing capabilities to perform front-end screening of contractor provided listings. Local utility programs should be developed to match data provided by contractors in standard electronic formats (preferably EDI compliant) to ASO databases to select the most promising C<sup>3</sup> candidates for management review. It is recommended that these utilities match C<sup>3</sup> candidates to files of open procurement actions and stratification files produced from the biannual requirements stratification process. This matching step would ensure that managers would only be required to review items with quantifiable requirements within periods covered by the stratification process. An additional selection parameter based on estimated prices which exceed a given threshold should be used to ensure efforts are initially expended on high cost procurements which are likely to have the highest C<sup>3</sup> payoff. \$500,000 is suggested as an arbitrary starting point. The price threshold should be adjusted up or down as experienced is gained with the process and assessments

can be made with respect to ease of implementation versus estimated savings.

*f. Concurrent Contracting with Other Customers*

ASO should encourage contractors to include items being ordered by customers other than NAVAIR on C<sup>3</sup> ordering window lists provided to ASO. Contractors are probably in the best position to determine if items they are producing for other customers require materials or processes similar to items that are listed on ASO BOAs or contracts. Although contractors can be expected to incur some additional costs in making such determinations, this option provides them a marketing opportunity for encouraging ASO to order earlier and/or in larger quantities than might otherwise be the case. Enlightened pricing strategies should allow contractors to share in the cost benefits of economic order quantities. The objective should be to create a win-win situation that encourages enthusiastic participation of both industry and Government in the C<sup>3</sup> technique.

*g. A Final Word on the Model*

This revised transactional model should mitigate the difficulties involved in investigating C<sup>3</sup> opportunities and allow more systematic application of the technique. It will not, however, alleviate difficulties involved in determining accurate required spares quantities outside of the

normal SDR process or quantity changes driven by demand and inventory fluctuations beyond ASO's control.

Finally, it is recommended that ASO and NAVAIR review existing processes to determine which add value to the SAIP effort and which have yielded negligible payoffs. Specifically, the draft RFP and PRMIS database processes should be evaluated to determine if they should have a place in a more systematic model.

### 3. C<sup>3</sup> Selection Criteria

To ensure the greatest possible return on investment, ASO and NAVAIR should restrict application of concurrent customer contracting techniques to items meeting the following criteria:

- Non-competitive procurements.
- For high cost WRAs and SRAs (or high estimated procurement EMV).
- With steady, predictable demand.
- And assured funds availability.

"High cost" in this context has a floating definition. The prototype process should set an arbitrary threshold on procurement EMV (\$500,000) under which concurrent contracting opportunities would not be pursued. The threshold would ensure that listings would be produced only for items with a high potential payoff and would keep listings to a manageable size. The threshold should be lowered or raised depending on



the success and level of difficulty involved in implementing a revised process.

There are no absolutes in the area of concurrent customer contracting. Savings are where you can find them. But considering the level of effort usually expended in implementing the technique, and that more than one customer is involved, it is prudent to concentrate on the items that are likely to have the highest payoff and the lowest chance of serious complication due to demand fluctuation or lack of funding.

#### **4. Estimating Savings**

It is recommended that estimates of savings from implementation of the C<sup>3</sup> technique be based on the difference in the definitized price of a C<sup>3</sup> procurement as compared to the lowest historical price of a non-C<sup>3</sup> procurement for similar quantities of identical items adjusted for inflation. If such historical data is not available, savings may be based on contractor estimates of prices for lower production quantities.

Since it is difficult to reliably determine C<sup>3</sup> savings, especially before prices are definitized, great caution should be exercised in relying on such estimates to justify a non-competitive procurement. The estimates should be relied upon solely to gather statistical evidence of savings efforts in sole source situations.

Targets or goals for C<sup>3</sup> savings should not be established. Estimates in that case would be developed to satisfy the goals. Additionally, since the accuracy of any estimate would be questionable, significant resources should not be devoted to determining C<sup>3</sup> savings on an individual procurement. Attempting to estimate C<sup>3</sup> savings is only justified in so far as such information is required to assess the advisability of investing resources to improve the efficiency of the technique and broaden its application.

C<sup>3</sup> savings are common sense and an article of faith. The technique needs no further justification. The technique should be used in sole source situations whenever it can be implemented with a reasonable level of effort in consideration of the likely payoff and its competitive demand for management time and its disruptive influence on more orderly processes for meeting fleet requirements.

## APPENDIX A

### GOVERNMENT SURVEY QUESTIONS

Date:

Name of your Command or Activity:

Your Name:

Your office or section:

Your position:

Number of years in your current position:

Number of years you have worked in the acquisition field:

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

2. DoD Inst 4245.12 (canceled by DoD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- a. at the same time and on the same contract as production buys?
- b. at same time as production buys but on different contracts?
- c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- d. at the same time with suppliers/vendors that the prime places orders with them?
- e. some other arrangement? (Please describe)

9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it



possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

Date:

Name of your Command or Activity:

Your office or section:

OPERATIONS DIRECTORATE

1. CONTRACT

Your position: BRANCH CHIEF

Number of years in your current position: 8

Number of years you have worked in the acquisition field: 23

Phone number: (314) 263-2245 DSN 693-2245

1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

BLACK HAWK helicopter multi-year contracts.

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.

b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.

c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

In the case of multi-year contracts, when you may be buying spares for more than 1 year, there should be reasonable assurance that the items will remain sole source throughout the period. Any item that is a likely breakout candidate for competition probably should not be included.

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spare requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares catch-as-catch-can, notification of ordering windows, etc.)

My experience has always been in conjunction with multi-year contracts. After the end-item requirement is identified by a PM office, the contracting office requests spares requiring offices to provide list & qty of spares for the same ordering period as the end item - between 2 + 5 years. List is usually small because of uncertainty of spares reqmts in out-years.

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

Yes. It causes no problems

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

The technique is appropriate. With declining budgets & programs it may be more difficult to justify: smaller qties mean less savings; out-year uncertainties affect our ability to accurately project reqmts.

Technique can be used with several different contract arrangements (multi-year, BOA, Indefinite Qty). There should be

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

*There's no change in the way spares reqmts are calculated*

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

a. at the same time and on the same contract as production buys?

*25%* b. at same time as production buys but on different contracts?

c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?

d. at the same time with suppliers/vendors that the prime places orders with them?

e. some other arrangement? (Please describe)

*75% F. Immediately after pdn buys + on a different contract,*



9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why? In my experience only the prime has been considered. Spares chosen are hi-dollar items which the prime ~~primarily~~ primarily makes.

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

Use the same criteria as was used for the estimation categories of labor + material, so as to capture learning curve savings + economies of scale on material. <sup>Maybe just outside the fence</sup> We haven't always quantified the savings attributable to

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

Breakout/Competition initiatives significantly affect number of items considered for SAIP. We've restricted the list to long-term sole sources.

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks? yes, but unless it's a multi-year I don't think that savings are very high. In any event, anytime it's a multi-year I don't think that savings are very high.

1. Correctly defining spares qty's is the primary risk. That of course translates to cost risk. Can be mitigated by use of option or some unique qty variation clause.
2. Long Term contracts, avoiding yearly admin efforts, is I think major benefit. We've gone up to 5 years. I'm comfortable from a cost standpoint with 3 years.

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

*I haven't been able to find anything.*

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

*No*

19 Feb 93

Supervisory Contract Specialist  
2 Years, 10 Months  
13 Years, 5 Months  
(313) 574-7224, DSN 786-724

1. I have had no direct experience with SAIP, i.e., incorporating secondary item requirements within the major item contract. However, the various Acquisition Center offices coordinate extensively to ensure that the pricing benefits which are the objective of SAIP are obtained to the extent possible when negotiating secondary item requirements with the prime contractor.
2. Negative.
3. Being assigned to a major system for the majority of my career, I have no specific knowledge about how SAIP is handled by the requirements offices. However, when the Acquisition Center receives a requirement for secondary item procurement from the prime contractor, either the prime will incorporate that requirement in purchase orders placed in support of the major item and/or the Acquisition Center contracting and pricing offices work closely together to ensure economies of scale are obtained to the extent possible.
4. Not applicable.
5. If "replenishment spares" is defined as low cost, high demand secondary item requirements, I believe that SAIP may not be appropriate. Of primary consideration would be the competitive nature of the item. The prime contractor would conduct its competitive buy, but the government would then have to pay the prime contractor's profit; a comparison of this cost would have to be made against the government's expense of conducting the acquisition. In many instances, such items are purchased in lot quantities and any savings generated by the SAIP concept could be minimal, especially considering prime contractor profit and today's reduction in major item acquisition.
6. Not applicable.
7. Unknown.
8. This office has never incorporated Spares requirements in its major item contracts. Spares requirements are used in negotiating overhead rates and, when possible, incorporated by the prime contractor in its purchase orders place in support of the major item. When asked, the prime contractor will identify its supplier to the government.
9. Not having any SAIP experience, I would think that the best



technique would be utilizing the vendors/suppliers if possible. This would save the cost of the prime's markups; which would have to be balanced with the cost of the government's acquisition process of the item(s) in question.

10. Not applicable.

11. Depending on the secondary requirement, SAIP may conflict with the listed goals. I have not incorporated secondary requirements in the major item contract, so I have no experience in such resolution.

12. I would think that the three major risks/costs would be a) the cost of the prime's markups; b) conflict with the procurement objectives mentioned in paragraph 11; and c) PALT (with a sole source contractor on a major system). I wouldn't think that a general statement could be made regarding benefits outweighing the risks - it would have to depend on the secondary item(s) in question.

13. Not having implemented SAIP, no.

14. No. I am not aware of any SAIP acquisition activity currently taking place.

#### General Comments:

My contracting experience has been with the Abrams Tank for the last 9 years and my comments are based on that experience. Contracting for the Abrams Tank requires placement of a contract for Long Lead Material (LLM) approximately 24 months prior to first vehicle delivery. Not only is it difficult to determine tank requirements this far in advance, I would imagine that spares requirements may be even more difficult to determine.

Because of the requirements turbulence which occurs between LLM award and final determination, the prime contractor often includes Option requirements in purchase orders. In the event these option requirements are not needed to support production, the prime contractor may use them to satisfy spares requirements. Likewise, if the prime contractor has a spares requirement which he can include with a production requirement, it does so.



Date: 15 JAN 92

Name of your Command or Activity: AVIATION SUPPLY OFFICE

Your Name:

Your office or section:

Your position:

Number of years in your current position: 3

Number of years you have worked in the acquisition field: 21

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

SPARES FOR SYSTEMS APPLICABLE TO  
A VARIETY OF IN-PRODUCTION AIRCRAFT.

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

I DO NOT BELIEVE THAT THOSE INDIVIDUALS  
HERE AT ASO WHO ORIGINATE THE ACTION TO  
COMBINE SPARES BUYS WITH PRODUCTION UNITS  
HAVE THE WHEREWITHAL TO DETERMINE EVEN  
A ROUGH ESTIMATE OF 2.a. - THIS IS ~~ALMOST ENTIRELY~~ <sup>ALMOST ENTIRELY</sup>

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

There is not a structured communication process that provides a notification of, primarily NAVAIR-initiated, production order windows.

Rather, informal communications between ASC inventory/logistics managers and ~~the order~~ NAVAIR's PMA/PAML are the usual vehicle for determining SAIP opportunities.

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

Yes there are different funding lines - these present no particularly significant problem administratively to cite them discretely. It is the availability of the separate funding citations at the time of award which can be problematic.

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

~~The~~ I believe it is appropriate although as stated in para 2 I cannot objectively ~~quantify~~ quantify the related economies achieved by combining buys.

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

*The variation in ordering times required by process are not normally significant enough to incur obsolescence risks - if design is expected change the manager here will forego SAIP - of course, is a judgement call.*

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

*SAIP does not cause the spare math to be applied differently although perhaps it should. It is noted that our normal reorder program SDR (Supply Demand Review) will not key to SAIP windows so the processing of commencing a timely SAIP spare package is entirely non-mechanized.*

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

*85%* a. at the same time and on the same contract as production buys?

b. at same time as production buys but on different contracts?

*10%* c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?

*5%* d. at the same time with suppliers/vendors that the prime places orders with them?

e. some other arrangement? (Please describe)



9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

*It is preferable from a cost standpoint to go directly to the vendors when they are known to us - often we don't know who they are early in the program when large investments are usually made.*

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

*See #2*

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

*Not in my AREA OF EXPERTISE.*

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

- ① Timing - we lose control of both admin + prod leadtimes and therefore of the ultimate delivery of material
- ② Availability of separate pots of money when both are required to effect the negotiated qtys.<sup>5</sup>



13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

N/A ??

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

N/A ?

Date: 19 January 1993

Name of your Command or Activity: Navy ASO

Your Name:

Your office or section:

Your position:

Number of years in your current position:

Number of years you have worked in the acquisition field: 21<sup>1 yr.</sup>

Phone number: (215)

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

SH-60 A/C

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

High cost repairables (WRAs) and high cost SRA's.

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

Verbal communication by phone or meeting and with great difficulty.

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

Yes

When ready to award, both funds are not available. Delays result as does possible splitting of requirement.

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

Yes.

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

Not necessarily. Generally SAIP can be done with later production runs. ASO would not manage the item until design had stabilized.

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

No.

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- ☒ a. at the same time and on the same contract as production buys?
- ☒ b. at same time as production buys but on different contracts?
- ☒ c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- ☒ d. at the same time with suppliers/vendors that the prime places orders with them?
- e. some other arrangement? (Please describe)

All of the above have been used at one time or another.



9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why? DCAs will provide much lower pricing as there is no markup, but with much more difficulty coordinating the requirements.

Prime Contractor is much easier to manage but at substantially higher cost.

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

If available, based on stand alone proposals. Sometimes based on stand alone quote from contractor. If neither available, buy estimate.

Probably in the ball park.

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

None. SAIP isn't used to preclude competition or breakout. SAIP is generally when item is sole source so no impact on source economic goals.

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

Benefits outweigh risks (savings outweigh the fact that its hard)

Costs - time  
Administrative effort.

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

Date: 1/22/93

Name of your Command or Activity: NAVAL AVIATION SUPPLY OFFICE

Your Name:

Your office or section:

Your position: SUPPLY SYSTEMS ANALYST

Number of years in your current position: 2

Number of years you have worked in the acquisition field: 15

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

H53 GEARBOX

H53 MAIN ROTOR HUB

AN/CP4-152

S-3B RADAR INTERFACE UNITS

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

No. I THINK ALL 3 CRITERIA ARE VIABLE WHEN CONSIDERING SAIP. IN MY OPINION, BEST CANDIDATES TEND TO BE HIGH, STEADY VOLUME OF DEMAND, STABLE DESIGN, NEWER SYSTEMS WITH HIGH PROBAB  
OR REPAIR COST.

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

*WEAPONS MANAGERS RECEIVE PERIODIC NOTIFICATION FROM OUTSIDE ACTIVITIES (NAVAIR, PRIME CONTRACTORS ETC) OF ORDERING WINDOWS OF WEAPONS SYSTEMS. THE NOTIFICATION MIGHT BE TRANSMITTED ELECTRONICALLY WITH ON LINE PROGRAMS THE WEAPONS MANAGERS CAN ACCESS OR HARD COPY REPORTS.*

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

*SAIP IS APPROPRIATE IF WINDOWS OF OPPORTUNITY FIT THE TIMING OF THE REQUIREMENT AND REDUCE COST OF SPARES AT THE SAME TIME.*



6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

*UICP IR/7R REQUIREMENTS DETERMINATION MODEL  
I DON'T BELIEVE A DIFFERENT MODEL IS USED FOR SAIP  
BUYS VICE OTHER REPLENISHMENT BUYS.*

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- ~ 40 %* (a) at the same time and on the same contract as production buys?
- b. at same time as production buys but on different contracts?
- ~ 40 %* (c) through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- ~ 20 %* (d) at the same time with suppliers/vendors that the prime places orders with them?
- e. some other arrangement? (Please describe)

9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

SAVINGS ESTIMATES ARE NORMALLY BASED ON STAND ALONE QUANTITY MULTIPLIED BY STAND ALONE PRICE MINUS COMBINED QUANTITY MULTIPLIED BY SAIP PRICE. THIS IS DEPENDENT IN OBTAINING A STAND ALONE PRICE FROM THE CONTRACTOR. HISTORICAL DATA REFLECTS 10% SAVINGS FOR SAIP. THAT NUMBER I BELIEVE IS IN THE BALLPARK.

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

POTENTIAL CONFLICT WITH COMPETITION. IN MY OPINION, WHATEVER OBJECTIVE WILL RESULT IN LEAST COST, LEAST LEADTIME WHILE NOT DEGRADING READINESS.

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

BENEFITS

- MONETARY
- REDUCED PALT

RISKS

- LESS FLEXIBILITY IN TERMS OF QUANTITY, OBSOLESCENCE

Production lead time  
Contractor going  
material Proc.

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

*SUGGEST You Try ,*

Date: 4 FEB 93

Name of your Command or Activity: SACRAMENTO AIR LOGISTICS CENTER

Your office or section:

Your position: GS-2010-11, INVENTORY MANAGEMENT SPECIALIST

Number of years in your current position: FIVE

Number of years you have worked in the acquisition field: NINE

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

SCOPE SHIELD II (AN/PRC-139(C), AN/GRC-238, OF-228/4, and AN/TRC-199)

(ONLY EXPERIENCE IS THE SCOPE SHIELD II PROGRAM AND THE EXPERIENCE IS VERY LITTLE AT THIS TIME)

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.

b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.

c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

CRITERIA OKAY



3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

*SYSTEM PROGRAM OFFICE DEVELOPS NUMBER OF SAIP REQUIRED BY USING CONTRACTOR MEANTIME BETWEEN FAILURE AND NUMBER OF USERS.*

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

*SAME FUNDS. PROBLEMS ENCOUNTERED UNKNOWN.*

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

*RPR WARRANTY PLUS ISSL SHOULD COVER LOGISTICS UNTIL PAST PROGRAM PROTECTS FUTURE REQMTS.*

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

*NOT NECESSARILY -- USING SAIP DOES INCREASE RISK OF  
OBsolescence, INCORRECT QTY RQMT*

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

*UNKNOWN*

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

*YES* ✓ a. at the same time and on the same contract as production buys?

*NO* ✓ b. at same time as production buys but on different contracts?

*YES* c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?

*NO* d. at the same time with suppliers/vendors that the prime places orders with them?

*NO* e. some other arrangement? (Please describe)

9. In your opinion, is it preferable to use the SAIP technique with:

- (a) The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

DCNs

CONTINUITY OF CONTRACT RQMTS

BY REGULATION

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

GUESSIMATE — WORTHLESS

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

INTERFERES WITH BREAKOUT

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

MONETARY  
CONFIGURATION  
CORRECT SPARES QTYs

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

*NO*

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

*CON*



Date:

Name of your Command or Activity:

Your office or section:

Your position:

Number of years in your current position:

Number of years you have worked in the acquisition field:

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

Mobile Link Receiver Program  
Scope Shield II Program

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

Add - D. ASSURE DESIGN STABILITY  
E. Contractor must GET system in-hand of a  
configuration control Board approval (CCB).

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

most SAIP DECISIONS ARE MADE BY THE SYSTEM  
PROGRAM OFFICE (SPO)

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

REFR2 SYSTEM PROGRAM OFFICE

HQ ESC/AVJS HANSON AFB MA.

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

YES - IN MOST CONTRACTS WHAT ENDS UP HAPPENING  
IS THAT THE SAIP SPARES ARE ROLLED INTO  
THE ISSC - INITIAL SPARES SUPPORT LIST.  
ALSO DEPENDING ON THE CURRENT BUDGET AT LEAST  
YOU WOULD HAVE SPARE PARTS TO SUPPORT YOUR <sup>3</sup> SYSTEM

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

YES - ANYTIME you buy early in a contract  
There is always the risk of unstable design.

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

N/A

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- a. at the same time and on the same contract as production buys?
- b. at same time as production buys but on different contracts?
- c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- d. at the same time with suppliers/vendors that the prime places orders with them?
- e. some other arrangement? (Please describe)

Refer to System Program  
Office (spo)

9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

A. The Prime Contractor - Regulations will not allow you go directly to sub vendors, since prime will sub contract to vendors.

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

Refer to SPO

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

Refer to SPO

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

- 1. Configuration
- 2. Obsolescence
- 3. Readiness

In most cases SAIP does outweigh the risk.



13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

Refer to SPO

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

Refer to SPO

Date:  
Name of your Command or Activity: SM-ALC/ACC/11th AF  
Your office or section:  
Your position: INVENTORY RIGHTS SEC.  
Number of years in your current position: 8 1/2  
Number of years you have worked in the acquisition field: 10 1/2  
Phone number: DS

1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

Scope Shield II: (AN/PRC-139(C), AN/GRC-238, CF-238/4, and AN/TRC-199)

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

d. assure design stability

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

SPO office determines SAIP etc  
+ a buy based on the  
... with the production  
and items by the SPO on the  
production contract.

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

No, funds now funding spares are  
procured by the PEO (program  
code) same as the items for the  
production

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

No, a better funding...  
to procure SAIP then to pro-  
cure spares. Due to in-  
adequate data at the  
time it would be pointless to  
... What amount of...

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

Yes it does not require you to order  
General spares earlier, but due to  
inadequate demand data at the time  
there is the risk of obsolescence  
and procurement.

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

Spares Requirements Determination  
FAC Regulation 107-07

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- Yes! 100%
- ✓ a. at the same time and on the same contract as production buys?
  - b. at same time as production buys but on different contracts?
  - c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
  - d. at the same time with suppliers/vendors that the prime places orders with them?
  - e. some other arrangement? (Please describe)

003



9. In your opinion, is it preferable to use the SAIP technique with:

- (a) The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

due to cost, by having the procurement is dealt with to the prime contractor

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

You can't estimate the savings  
it will be a net loss

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

Commercial off the shelf equipment

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

Risks

1. Obsolescence / configuration
2. correct spares qty. procured
3. Breakout for competition

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

1 directive, is AFR 800-26, a copy is attached. For additional documents contact SPC [unclear]

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

SPO:

A.

Date: 25 Jan 93

Name of your Command or Activity: AFMC

Your office or section:

Your position: Supervisory Supply Spec (Provisioning)

Number of years in your current position: 7.5

Number of years you have worked in the acquisition field: 12

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

Yes.

B-1B DAs

F110-GE-129 Engines

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

None at this time



3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

1. Contract for DI-3, Contractor Procurement Schedule for SAIP, and DI-1, Contractor Recommended SAIP.
2. Source list for candidates of SAIP, i.e., locations & ordering windows.
3. Notify Contractor of candidate selection & direct submission of those items on LIL (DI-V-7004)
4. Process LIL thru DDO, AFMC Procurement Systems
5. Output PIO to contractor thru James Mgr & PPCO.

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

Some cite Separate CLINs of SAIP.

No problems encountered so far

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

It is appropriate for replenishment & offers potential for savings.

However a PR is required for the procurement instrument rather than a PIO which could inhibit benefits (depends on contractor).



6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

Yes.

Yes there is an increased risk of obsolescence due to unstable design, and thus less savings.

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

Unknown - this determination is made by SSM.

Behaviors when our procedures are used the I-M uses IRP, Initial Requirements Determination (by AFMCR 57-27).

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- at the same time and on the same contract as production buys?
- at same time as production buys but on different contracts?
- through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- at the same time with suppliers/vendors that prime places orders with them?
- some other arrangement? (Please describe)

a, b, & c options have been used. Method depends on individual contract & how it is structured & managed. My experience has been primarily with opt b.

9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why? We have a better chance of configuration control if three Prime.

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

No data to provide answer.

No figures have been maintained by the office

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

There may be conflict if Interim Release is authorized on a contract. However we advise ~~them~~ SAIP procedures take precedence over Interim Release

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

- monetary = 5 to 10% savings associated w/ early procurement / ~~release~~ <sup>cataloging</sup> of items that may not be design stable.
- " = early procurement of items that L&A is not fully developed for good decisions as to operability
- " = expenditure of funds early in program ~~before~~ based on early programming of operational needs (Hobart, usage).

Date:

Name of your Command or Activity:

Your office or section:

Your position:

Number of years in your current position:

Number of years you have worked in the acquisition field:

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

F04701-81-C-0022 (SSP)

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

your high priced repairable items

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?



6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

1. SAIP does require you to order spares early in the program. When the equipment is unstable design it can DCN's for correct part numbers or maybe a modification to part of the equipment. This does cause problems, a delay in the processing of spare parts.

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- a. at the same time and on the same contract as production buys?
- b. at same time as production buys but on different contracts?
- c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- d. at the same time with suppliers/vendors that the prime places orders with them?
- e. some other arrangement? (Please describe)

9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

Date: 2 FEB 93

Name of your Command or Activity: AFMC

Your office or section: ---

Your position: LOGISTICS MANAGEMENT Specialist

Number of years in your current position: 8 yrs

Number of years you have worked in the acquisition field: 12 yrs

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

MILSTAR  
REACT/HAC/RMPE

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

INITIAL SPARES to support ORGANIZATIONAL MAINTENANCE. Where risk of obsolescence is manageable, spares should be procured along with installation assets to ensure support when system turned-over to the Customer



3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

Notification of ordering requirements and sending funds.

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

Can be. Depending on who has program for spares.

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

Yes, as long as production or installation assets are being produced. However, contract folks do not like to see replenishment requirements on production contracts.

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

Yes, earlier than normal. Potential for design changes and having to pay for both old/new.

Could be handled by buying up-front what will be finally delivered. In other words, put the risk on the contractor for any changes between ordering & installation acceptance.

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

Contractor recommends SAIP and we can also develop a model (spreadsheet) for determining requirements. Often requirements are based on mission criticalness. Initial spares requirements negotiated with the user.

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- a. at the same time and on the same contract as production buys?
- b. at same time as production buys but on different contracts?
- c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- d. at the same time with suppliers/vendors that the prime places orders with them?
- e. some other arrangement? (Please describe)

A. Appropriate to ensure no disconnects in timing or requirements.

9. In your opinion, is it preferable to use the SAIP technique with:

- a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why?

Ties Everything together & holds the prime contractor responsible. With vendors/suppliers loose ends are possible.

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

IF THERE ARE SAVINGS the information would probably come from the contractor and whether it is accurate is dependent on how the data would be used. Probably ball park. The REAL SAVINGS ARE HAVING SPARES to support in program. Subjective savings.

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

BREAKOUT, competition, Socio-Economic goal conflicts. Follow-on or replenishment procurement could be accomplished using other procurement objectives after the initial need for SAIP is realized. Why resolve the conflict if it is value and soundness in using SAIP.

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

READINESS

Support

AVAILABILITY

benefits

- obsolescence/configuration

- program cancellations

- spares quantities not firm

Risk

13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

NO. Responded based on past experience which was mostly trying to determine whether SAIP should be used on programs.

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.



\*  
\*

Date: 25 JAN 93

Name of your Command or Activity:

Your office or section:

Your position: Supply Specialist (Provisioning)

Number of years in your current position: 7

Number of years you have worked in the acquisition field: 13

Phone number: 912-

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

JOINT STARS

2. DOD Inst 4245.12 (canceled by DOD Inst 5000.2) listed three criteria to be met when considering SAIP procurement:

- a. Economies of scale achieved by combining spares orders with installation orders substantially exceed any added administrative costs. In general, this limits application of SAIP to repairable items and selected high-cost consumables.
- b. The item has been screened to ensure that sufficient quantities are not available within the required delivery period through normal supply channels.
- c. Risk of obsolescence is manageable.

Do you think there should be any additions or deletions to these criteria (What type of items make good SAIP candidates?).

NO

3. Please provide a brief explanation of how offices in your activity that are responsible for determining/ordering spares requirements coordinate SAIP buys with offices responsible for contracting for production end items. (Electronic Data Interchange, Standard Operating Procedure for screening all spares, catch-as-catch-can, notification of ordering windows, etc.)

The contractor provides a SAIP candidate list for the government's review. The government reviews and concurs/non-concurs in the contractor's recommendations. Items which are selected by the government is submitted by the contractor via an magnetic tape. Items are screened for existing National Stock Numbers and provided to the appropriate equipment specialist for the assignment of SMR codes and failure rates. The info is then forwarded to the Item Manager for computation. The orders are then placed on contract using the SAIP window provided by the contractor.

4. On your contracts, are different funds cited for production items and spares? Please describe any problems this causes.

There are line items for spares, both expense and investment on the production contract. There are not separate line items for SAIP; however, the Provisioned Item Order is stamped "SAIP".

5. Do you believe SAIP is an appropriate technique to use for replenishment spares? If not, can you suggest variations of the technique that might make it more useful or beneficial for replenishment spares?

No. Item Managers only procures when their comp cycle dictates. This may not be during the SAIP window.

6. Does SAIP require you to order spares earlier in the provisioning process than you normally would? What problems does this cause? For example, is there an increased risk of obsolescence due to unstable design, inadequate demand data, etc.?

Yes. There is an increased risk since FCA/PCA (Functional Configuration Audit/Physical Configuration Audit) have not been accomplished. Also, there is little failure information available at this time.

7. What models, computer programs or formulas do you use for determining spares quantity requirements (Mod-metric, ACIM, ARROWS, etc.)? Does SAIP require you to use different models for determining spares quantities than you would normally use?

All spares are computed using the IRD system.

8. Do you normally complete SAIP buys: (if more than one choice below applies, please indicate a percentage proportion for each arrangement)

- a. at the same time and on the same contract as production buys?
- b. at same time as production buys but on different contracts?
- \* c. through the prime contractor or with the prime's suppliers/vendors (the DCAs)?
- d. at the same time with suppliers/vendors that the prime places orders with them?
- e. some other arrangement? (Please describe)

32

9. In your opinion, is it preferable to use the SAIP technique with:

- \* a. The prime contractor
- b. The prime's vendors/suppliers (DCAs)

Why? Placing orders for spares early in the program is a high risk; therefore placing orders with the prime allows us to change the Provisioned Item Orders as part numbers change. This should ensure the latest configuration of an item is shipped.

10. How do you normally estimate the savings from a SAIP effort and how accurate do you believe those estimates are (Quite accurate, probably in the ball park, or worthless).

Our office does not estimate the savings. We do not have insight on the price of the production buy.

11. What other procurement objectives, if any, does SAIP conflict with (Breakout, Competition, Socio-Economic goals) and, how have you resolved these conflicts?

12. What do you feel are the three primary risks or costs and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

Obsolete configuration and correct spares quantities.

No. I do not believe the cost savings outweighs the risks



13. Can your command or activity provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

WR-ALC/LK may be able to assist.

14. Are there any other Government activities or contractors that you think would be able and willing to provide information for this research project. If so, please provide addresses, phone numbers and points of contact. Thank you.

## APPENDIX B

### CONTRACTOR SURVEY QUESTIONS

1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

a. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?

b. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

5. Please list any factors that you think contribute to SAIP savings, if any, and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

6. Which of the following approaches to contracting for SAIP spares is preferable? Why?

a. Purchasing SAIP items at the same time and on the same contract as production items?

b. Purchasing SAIP items at the same time as production items but on different contracts?

c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?

e. some other arrangement? (Please describe)

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area. (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via EDI?)

8. Previous researchers have suggested that combining spare parts requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

10. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

Date: March 29, 1993

Name of your Organization:

Your office or section: Programs

Your position: Senior Program Manager

Number of years in your current position:

Number of years you have worked in the acquisition field:

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

We have proposed and received contracts in the past that contained both production and spares in the same negotiation.

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

- 1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?
- 2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

It would be beneficial to combine spares and production acquisition at all times regardless of cost of spares.



3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

Decreases as a function of initial buy. SAIP eliminates an entire process of a spares order (no RFP, proposal, negotiation, contract award and associated administration).

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

Savings will be considerable. Often times, small quantity spares buys result in the contractor facing "minimum buys" when purchasing material for the end product. It is difficult to ascertain savings without specific information. However, simple learning curve analysis from production quantities prices to spares quantities prices will show basic savings.

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

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6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)
- a. It is obviously easier for the contractor to manage one (1) contract vice several. Also, separate orders are priced as individual quantities, and since an individual order can be cancelled, it loses the effect of multi-buy procurement.

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

The contractors ordering windows are typically driven by an MRP system. Suggest the Government consider some sort of MRP system that can handle inputs from several sites (i.e. ASO and various SPO's for production). Simple MRP systems are available in the market place. Additionally, experience indicates we need better coordination between APML and the IM/Weapons Manager at ASO.

8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

No. We have to support our prices regardless of what they are. DCMC and DCAA are constantly auditing our proposals (both pre-award and post-award).

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

Benefits certainly outweigh any potential risks. The only risk that we can think of is a potential risk with design changes mid-stream during production which would impact a larger quantity of items in SAIP. Again, benefits outweigh this potential risk.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

No.

11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

No.



Date: 2/8/93

Name of your Organization:

ER

Your office or section: CUSTOMER SUPPORT

Your position: MANAGER, LOGISTICS

Number of years in your current position: 4

Number of years you have worked in the acquisition field: 13

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

NONE APPLIED "EFFECTIVELY". IT HAS ALWAYS BEEN  
"TOO LITTLE & TOO LATE".

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?
2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

1. TRY TO APPLY TO EVERYTHING. TOP 50% OF ITEMS (BY COST)  
IS A GOOD GOAL.

2. APPLY TO ALL ORDERS IF ECONOMICAL.

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

INCREASES TIME. CUSTOMER IS USUALLY TOO LATE FOR SAIP TO BE EFFECTIVE

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

THIS IS HARD TO ANSWER. MAYBE 5 or 10%. DEPENDS ON THE HARDWARE AND THE COMPANY "PROCESSES".

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

1. MANUFACTURING SETUP

2. PURCHASING LARGER MATERIAL LOTS

3. MISC ADMIN & HANDLING

6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

THE CUSTOMER KNOWS THE "WINDOW"... JUST DOESN'T  
FIND THE TIME & MONEY TO MAKE SAIP WORK. THE  
PROBLEM IS WITH GOVERNMENT ORGANIZATIONAL  
STRUCTURES, COLORS OF MONEY, & TIMING.

8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

NO. MOST CONTRACTORS WOULD RATHER SELL SOONER, HAVE THE RIGHT QUANTITIES, AND HAVE A "SUPPORTED" PRODUCT.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

HAVE A STABLE DESIGN FOR SAIP ITEMS. THEN, JUST DO IT. SAIP WORKS WHEN "MANAGED" PROPERLY.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

NOT IN MILITARY CUSTOMER SUPPORT



11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

NONE OF VALUE.

Date: 2/4/93

Name of your Organization: Provisioning and Support Research

Your office or section:

Your position: Manager

Number of years in your current position: Seven (7)

Number of years you have worked in the acquisition field: Thirty-Five (35)

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

- A. B-1A (Prior to cancellation in 1977). Made a trip to MCAIR, St. Louis, Mo. to discuss SAIP with the original author, Mr. C. Siler.
- B. B-2A.

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

- 1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?
- 2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

- 1. AFR 800-26 should be restricted to cover only high cost repairable items (basically limited to LRUs) since it is not only not cost effective from an administrative/management standpoint, but also because obsolescence charges should be significant for a new Weapons System.....early on in the program.....and generally for parts which have significantly low procurement leadtimes which dictates procurement later on in the spares documentation cycle.
- 2. If SAIP is deemed a viable procurement methodology for initial support, then the apologetics for such spares contracting would be even more applicable to follow-on and/or replenishment support requirements.

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

Currently, SAIP contracting time is probably increased because of two reasons:

- a. SAIP contracting and funding is not provided concurrently to industry with the production (install) contract.
- b. The SAIP procurement/contracting methodology requires more understanding and better marketing methods on both sides of the fence, i.e., government and industry for a less costly implementation.

Because of these issues an estimated 50-100% more contractor involvement is required for SAIP.

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

SAIP contracting has always assumed there will be unit cost savings without regard for any increase in fat tooling, test equipment, etc. If this SAIP concept were properly marketed by the government "up front" a better understanding might not only be achieved for "install" unit pricing, but could also be achieved for "stand alone" unit pricing during (and as an integral part of) production install proposal response by industry.

At this juncture, price estimates would be about as good as they would ever be, save for stand alone procurement executed by the government in an "actuals" environment years later in the Program.

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

- a. SAIP funding concurrent with production (install) funding.
- b. Concurrent make/buy planning by industry.
- c. Consolidated material purchases by industry.....but deferring fabrication, assembly, and testing until later on in the production build cycle so as to reduce obsolescence costs prior to completion of qualification unit testing. For SAIP items such manufacturing activity could be deferred (on a leadtime away basis) in the overall production delivery schedule to support first article delivery.

6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

A combination of b. and c. (through the prime contractor) is preferable since it mandates ILS participation by both government and industry personnel to separately manage SAIP items notwithstanding the fact they (SAIP items) are consolidated in a production (install) build schedule.

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

Again, the procurement, pricing, manufacture, and delivery of SAIP spares to support delivered and to be delivered operational weapons systems has not been properly marketed by government personnel, i.e., special briefings, discussions, surveillance, during the RFQ/proposal/contract award program phases. If this were accomplished, contractor personnel would be more responsive to government SAIP (contractual) requirements. At present, SAIP is not as visible up front in the critical initial contracting phases as it should be.

When the government authorizes funding for long lead material and/or weapons system procurement, that is the time in the contracting cycle to identify and fund SAIP items. It is very difficult for ILS personnel in charge of SAIP to follow and be continually aware of proposal/procurement activity which is strictly earmarked for production install....then relate such timing back to the government in the form of SAIP schedule "windows". What is happening is precisely the reverse of what ought to happen.



8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

I would not agree with such a thesis. In the first place, the SAIP requirement is strictly a government call, and as such I can't envision any contractor turning down an end item production contract just because SAIP is mandated. Secondly, if the contractor does a reasonable pricing/manufacturing job, he is more likely to receive the follow on business. If not, he is not guaranteed follow on business anyway. The "buy in" is definitely separate to that of SAIP, since the contractor will have a definitive (known) quantity of spares up front as a larger base to amortize costs and gain a profit. Without knowing the spares support quantities up front, it's just a guessing game as to what additional units he will receive to "recover costs", or make "additional" profit. Finally, if the government is really serious about applying the benefits of SAIP to every applicable contract, then there will be "no other game in town" and contractors will not have any other option.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

As previously discussed, I believe the benefits outweigh any risks.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

No.

11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

The data that is extant regarding SAIP on the B-2 Program would probably be little, if any help.

Date: 2-1-93

Name of your Organization:

DIVISION

Your office or section: INTEGRATED LOGISTICS SUPPORT

Your position: MANAGER, SUPPORT HARDWARE DELIVERY

Number of years in your current position: 21

Number of years you have worked in the acquisition field: 35

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

1. Was proposed for the solicitation to replace the Air National Guard aging aircraft but the competition was won by the F-16 hence we do not use it for the F-20.
2. Used to support sales of F-5E/F aircraft to FMS users where aircraft delivery was required six mo. after go-ahead.

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?
2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

1. Is appropriate for any on-aircraft maintenance spares when lead time is the prime consideration.
2. SAIP is employed through the prime contractor during production. Even though the prime would get a price break for a larger quantity, his markup on spares where he adds no value would exceed the savings. It would reduce the amount of non-conforming hardware that ends up being delivered when the prime is not monitoring design changes against government blanket procurement.

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

Considerably decreases the time. Six to twelve months.

1. proposed by prime, negotiated with USG = 6 months
2. proposed by prime, competed through breakout - 12 months

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

USG should have history of actual SAIP program savings or increases to cost.

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

The biggest savings is in the overall lead time required to deliver negotiated spares. This is very important to new development contracts because of the configuration change factor experienced early in the design phase. It assumes that spares match production hardware. When spares are managed by item managers they do not control the production of spares affected by design change as well as or as soon as primes. Primes can place options in their sub-contracts that allow for add-on quantities at a pre-negotiated reduced rate as long as the option is exercised by a particular date. In this manner orders for spares can be delayed until the configuration is finalized.



6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

using method A provides the benefit of assuring spares match the delivered configuration(s) in the right quantity also reduces the incidence of minimum quantity buys exceed the total spares requirement quantity.

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

In today's environment it would be very easy to integrate production schedule visibility with an electronic ordering process that would allow government production and support personnel to work independently.

8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

This doesn't make sense. SAIP employed through the prime contractor utilizes the same source for spares as production. This process assumes that spares are procured from the original source and therefore increase the "buy-in" phenomenon for completed production contracts.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

Relying on the prime contractor to deliver spares reduces all risks except increased resale prices. Depending on the stability of the design, SAIP could increase costs.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

We have provided spares (initial) with direct sale customers contracts for production F-5E/F aircraft. Items and quantities were determined through direct negotiations before contract award. This is possible for an "off-the-shelf" design.

11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

*not available any longer.*

Date: 3/1/93

Name of your Organization:

Your office or section: 2513/76

Your position: MANAGER

Number of years in your current position: 4

Number of years you have worked in the acquisition field: 21

Phone number: (

1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

INITIALLY, THE JF-17B PROGRAM FOLLOWED SAIP, IDENTIFYING PRODUCTION LOT ACQUISITIONS TO THE NAVY AND PROCESSING RESULTANT ORDERS. AS NAVY FUNDING FOR REPLACEMENT SPARES BECAME MORE RESTRICTED, THIS PROCESS STOPPED. MORE RECENTLY, AN INTEREST HAS BEEN EXPRESSED BY THE NAVY TO RESTORE SAIP PRACTICE.

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?

2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

SAIP SHOULD BE PRACTICED AT ALL COST LEVELS, EITHER TO THE PRIME CONTRACTOR OR TO A SUPPLIER OF DETAIL PARTS. THE ECONOMIC ADVANTAGE IS TO GOVERNMENT ON SMALL PARTS DUE TO SUPPLIER PRODUCTION RUNS, ON LARGER COST ITEMS, SAIP ON REPLENISHMENT ESPECIALLY IF THE PRIME IS STILL IN PRODUCTION CAN SAVE MONEY. ONE METHOD IS TO PLACE THE ORDER DIRECT WITH THE SUPPLIER, AND THE ON TO THE PRIME'S PRODUCTION RUN.



3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

THE TIME REQUIRED IS STILL DEPENDENT ON FAR/DAR TEC'S. THE ADVANTAGE IS PRICE/LEAD TIME

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

TO OBTAIN A COMPARISON, AN EQUAL QUANTITY WOULD HELP, HOWEVER LOW QUANTITIES FROM DOD, INCLUDED WITH LARGE PRI IN PRODUCTION BOYS WOULD SEEM TO HAVE A PRICE ADVANTAGE

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

COST EFFECTIVE REQUISITIONS REDUCE FINANCE ON PROCESSIONS SUCH AS 'AOB' OR 'EXPEDITE' TO PROVIDE PARTS

PRICING OF SPARES BY PRIMES CONCURRENT WITH ANNUAL PRODUCTION CONTRACTS IS ANOTHER COST REDUCTION INITIATIVE IF PRICE IS GOOD FOR 12-18 MO.

6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

DEPENDENT ON IN/OUT OF PRODUCTION STATUS,  
ALL THREE APPROACHES COULD BE USED.  
DOD FUNDING MAY NOT CORRESPOND TO PRIME  
CONTRACTOR

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

AGAIN, I BELIEVE SPARES SHOULD BE PRICED  
ANNUALLY WITH A PRIME'S PRODUCTION PRODUCTION  
~~AND~~ PROGRAM. THE PRICES AND LEAD TIMES  
SHOULD BE VALID FOR 12-18 MO. THIS  
FREEZES THE PRICES AND ELIMINATES  
THE NEGOTIATION/DEVALUIZATION PROCESS.  
DOD ORDERS THE PART/QUANTITIES REQUIRED.  
THE PRIME SHIPS AND BILLS (SIMPLE).  
THE ONLY REMAINING CHALLENGE IS TO  
ELIMINATE THE 30-90 PAGES OF PART/LDR  
PRICING DATA REQUIRED FOR EACH ORDER.

8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

SOMEWHAT, HOWEVER THIS PROBLEM BECOMES MORE ACUTE WITH OUT-OF-PRODUCTION PROGRAMS ONLY, WHERE TOOL-UP COSTS CAN BE OPTIMIZED IF A REPEAT BUSINESS CAN BE ANTICIPATED.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

THERE IS NO RISK IF AN ANNUAL PRICE AND LEAD TIME IS ESTABLISHED

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

NO, NOT AT THIS TIME

11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

WE HAVE PROVIDED PRODUCTION LOT  
RETIREMENT SCHEDULES TO ASD FOR  
SEVERAL YEARS, WITH NO ORDER  
RESPONSES TO DATE.



Date: 4/12/93

Name of your Organization:

Your office or section: CUSTOMER MATERIEL REQUIREMENTS

Your position: BUSINESS ANALYST

Number of years in your current position: 5

Number of years you have worked in the acquisition field: 5

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

CONTRACTS: F. IPE SPARES  
SECTION H-907, INITIAL PROVISIONING  
  
F3 07 F119 EMD  
PROVISIONING REQUIREMENTS STATEMENT (ATTACHMENT 19)

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?
2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

- 1). SAIP IS USUALLY MORE EFFECTIVE WHEN APPLIED TO HIGH DOLLAR (APPROX. \$1,500) LONG LEAD (APPROX. 18 MONTHS) SPARES.
- 2) SAIP TRADITIONALLY HAS BEEN FOR INITIAL PROVISIONING, BUT CAREFUL COOPERATIVE PLANNING MAY ALSO MAKE SAIP SUITABLE FOR REPLENISHMENT.

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

WHILE SAIP DOES NOT AFFECT THE AMOUNT OF TIME REQUIRED TO CONTRACT FOR SPARES, IT DOES MAKE THE SPARES AVAILABLE IN A MORE TIMELY MANNER AS THE ORDER IS PLACED A LOT EARLIER.

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

NO

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

A REDUCTION IN SPARES COSTS MAY BE REALIZED BY COMBINING THE SPARES REQUIREMENTS WITH PRODUCTIVE INSTALLS AND POSSIBLE INCLUSION OF OTHER ORDERS IN THE CONTRACTORS BUSINESS BASE.

REDUCED ADMINISTRATIVE COSTS MAY RESULT FROM COMBINING PURCHASE ORDERS AND ISSUING SINGLE CONTRACTS. HOWEVER, THESE COSTS ARE TYPICALLY EXPERIENCED BY FUNCTIONAL GROUPS WHO CHARGE ON AN INDIRECT BASIS AND, THEREFORE, WILL HAVE AN INSIGNIFICANT IMPACT TO ANY ONE CONTRACT.

6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

BY PURCHASING THE SPARES DIRECTLY FROM THE PRIME CONTRACTOR, THE GOVERNMENT WILL CAPITALIZE ON THE CONTRACTORS EXPERIENCE IN DEALING WITH THE HARDWARE. CONFIGURATION CONTROL IS ONE AREA WHERE THE PRIME WILL BE ABLE TO DELIVER THE CORRECT SPARE TO THE PROPER DESTINATION AT THE LOWEST POSSIBLE PRICE.

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

TYPICALLY, SAIP APPLIES TO INITIAL PROVISIONING AND BOTH ARE USUALLY BOUGHT AND FUNDED BY THE SAME AGENCY. ASO, WHO BUYS REPLENISHMENT SPARES, COULD COORDINATE THEIR PROCUREMENTS WITH NAVAIR, WHO BUYS KITS AND ENGINES, BY COORDINATING DELIVERY REQUIREMENTS WITHIN THE GOVERNMENT. THE GOVERNMENT HAS THE NECESSARY VISIBILITY. FUNDING TRANSFER IS ANOTHER ALTERNATIVE WHICH COULD AUTHORIZE A SINGLE BUYING ACTIVITY ON ONE CONTRACT.

8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

DISAGREE. THE SAME "RANGE AND DEPTH" OF SPARES WILL BE REQUIRED REGARDLESS OF HOW THEY ARE PURCHASED. DURING NEGOTIATIONS, THE GOVERNMENT IS PROVIDED WITH COMPLETE COST VISIBILITY AND WEIGHTED GUIDELINES TO ESTABLISH FEE RATES. IT SHOULD BE NOTED THAT TYPICALLY PRODUCTION ENGINES ARE IN SERVICE MANY YEARS AFTER ENGINE PRODUCTION ENDS, AND THEREFORE REPLENISHMENT SPARE PART PROCUREMENTS UP FRONT (I.E. SAIP BUY OUT) ARE NOT COST EFFECTIVE FOR THE SYSTEM LIFE DUE TO THE INVENTORY CARRYING COSTS AND COST OF OBSOLESCENCE.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

THE PRIMARY RISK FOR A SAIP CANDIDATE IS DESIGN STABILITY. WHEN PROPERLY MANAGED, THIS RISK CAN BE GREATLY REDUCED.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

NOT APPLICABLE.



11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

THE ABOVE MENTIONED INFORMATION IS NOT AVAILABLE FROM PRATT & WHITNEY, BUT IS AVAILABLE THROUGH THE FOIA.

Date: February 17, 1993

Name of your Organization: Group

Your office or section: Integrated Logistics Support Operations

Your position: Vice President

Number of years in your current position: 3 yrs.

Number of years you have worked in the acquisition field: 35 years

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

SAIP is understood to mean Spares procurement concurrent with production in order to achieve a price advantage. The various systems on which SAIP techniques have been used are as follows:

- o EF-111 Receiver/Processor Group and Avionics Modernization Program.
- o F-14 Multi-mission capability (ECPL285) and modifications to "B" Model aircraft.
- o E-2C Group I and II Modification Avionics Change.

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?
2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

- 1) SAIP should be restricted to high-cost repairables.
- 2) SAIP should be utilized for both, if timing permits and funds are available. Other considerations should include procurement of "Economic Order Quantities" to maximize savings.

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

SAIP will decrease the amount of time required to contract for spares since contractual processes; e.g., order, negotiation, sub-vendor purchase orders and contract definitization, are performed once. Contract times are estimated to be decreased by 15%.

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

Price savings estimates are too difficult to determine, since so many variables must be considered; i.e., timing, quantity procured. Would not be able to suggest methodology for determining savings.

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

Processing time and reduction of redundant actions both contribute to the savings generated by SAIP, but the largest contributor, by far, is cost reduction due to the volume (quantity) of the procurement. Other factors trail behind the price break provided by buying in quantity.

6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

Purchasing SAIP items at the same time and on the same contract as production items is the preferable method. It is the simplest, least expensive and most direct way of contracting.

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

Following the SAIP procedures currently outlined is sufficient given that, once notified of a window by the prime contractor, the contracting agency and any support agencies perform their functions in a timely manner. This includes identification of the requirement, obligation of funds and contracting for the procurement. ASO has been routinely advised of "windows" in the past, however, the time required for coordination with NAVAIR and the availability of funding has caused disconnects.



8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

Do not agree with the comments forwarded by previous researchers. The contractor, all things being even, will sell the same amount of spares over the life cycle of the equipment. The potential for savings on the part of the government and the contractor is an incentive for both parties to enter into a SAIP contract whenever possible.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

Risk, in a SAIP contract, is minimized. Configuration problems are reduced due to the concurrent timing of the buy. PALT for the single procurement should be shorter, overall. Spares quantity disparities will self-correct, either upward or downward as actual demand is factored into the procurement formula.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

SAIP-type procurements have not been entered into with non-government customers. FMS buys are considered to be government procurements.

11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

The attached documentation (Primary Data Item Descriptions governing SAIP and Excerpt of Draft MIL-STD-1561C) is provided to assist in researching the subject. Historical data is not available.

Date: 10 Feb. 1993

Name of your Organization:

Your office or section Procurement/DEPT. 763

Your position: Purchasing Agent

Number of years in your current position: 3

Number of years you have worked in the acquisition field: 14

Phone number:

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1. Have you had any experience with contracts/programs that employed the SAIP technique? If so, please list systems on which the SAIP technique was used.

Yes

- \* F-15 & F-18 Radar (Hughes) acquisition
- \* F-15 Radomes

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?
2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

I believe that SAIP is applicable to all spares that can be procured at the same time with production, assuming "total" funding availability. I think the United States Government should do a screening of all requirements of parts and try to procure as many spares as possible during production runs. This will spread out start-up costs, set-up costs and material costs on all parts including the production quantities. Some spare parts, when not bought with production, are extremely expensive due to small quantities.

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

Generally SAIP decreases the time spent on contracting because the total procurement can be accomplished with one negotiation and one purchase order. It may spread out the lead time on the spares procurement in that the production buy usually is large and would require an audit prior to negotiations and a regular spares procurement might not require audits. This is why the Government has to plan the requirements, forecast better and provide funding for both at the same time.

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

I don't know of any way to estimate SAIP savings except by using two separate proposals. The two separate proposals are reality. The Govt. should do a program to test the savings by way of two separate proposals on many, varied parts. Take this data and use it as an estimate. It really would not be accurate since each procurement is different from other procurements, there are different time frames, quantities and Terms and Conditions.

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

- 1) Avoidance of Seller set-up costs.  
(Flowing down to subcontractors)
- 2) Reduction in Administration costs.
  - \* Auditing
  - \* Contracts
  - \* Purchasing(Administration of one P.O. instead of administration of two P.O.s)
- 3) Cost associated with larger quantities.
  - \* Learning curves
  - \* Qty discounts on Material



6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

a. is preferable due to reduction in procurement time associated with issuing two P.O.s and seller administration costs.

b. is not that much different though, since you will negotiate the two quantities together and run the two P.O.s through the signature cycle together. It does impact seller administration cost.

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

I do not believe that it is the contractor's responsibility to do the Government's job for them. There should be a Dept. set aside just for the coordination of SAIP issues. This Dept. should coordinate with all ALCs and buying authorities to channel the procurements through one buying command. This Dept. would have to keep records of "Estimated" savings to justify their existence. If the department can not justify their existence, then the SAIP concept will not work, but this Dept. should have no problem justifying their existence with good management.

8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

I disagree. Contractor's don't "buy-in" based on future spares but on future production quantities. If the contractor's know the spares are procured with production and limited spares will follow, then you might get more realistic proposals.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

The primary risks are incorrect spare quantities and obsolescence/configuration. The incorrect spare quantities can be minimized by good planning and follow-up. The obsolescence is a risk. The benefits are manufacturing cost reduction and administration cost reductions. I believe that the benefits outweigh the risk associated with the SAIP program, if the program is managed correctly.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

NO.

11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

The above comments are my opinions and not necessarily those of MDA-E. However, SAIP procurement of spares on the F-15 Radar goes back to the late 1970's, and there were documents provided by Hughes Aircraft on the anticipated savings involved. This information is probably in MDA-E permanent record files and may be difficult to locate at this time. However, said documentation was provided to the Government at the time.

**Date:** 16 Mar 1993

**Name of Organization:** Integrated Logistics Support (ILS)

**Position:** Manager, Logistics Engineering

**Years in Current Position:** 15

**Years Experience in Acquisition Field:** 35

**Telephone:**

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1. Electronic Systems has been utilizing the SAIP technique for the past 20 years in order to reduce customer costs. The SAIP process has been incorporated in produced systems like the AN/ALR-56, AN/ALR-56A and the AN/ALR-56M. LES is currently using the SAIP technique during the production run of the AN/ALR-56M Advanced Radar Warning Receiver.
2. (1) SAIP's greatest benefit is found in reduced costs for expensive reparable items such as Weapon Replaceable Assemblies (WRAs) and Shop Replaceable Assemblies (SRAs). The SAIP process is also appropriate when provisioning low cost consumable spares since the provisioning cost will be reduced. Another benefit is the availability of consumable spares at the time of initial system deployment.  
  
(2) SAIP should not be restricted to initial outfitting requirements as long as the configuration baseline has been maintained for the WRAs and SRAs. Although appropriate, caution must be used when using SAIP for routine replenishment requirements to ensure that the configuration of the replenishment items meets the required interchangeability criteria. History tells us that the longer a production run matures, the more difficult it becomes to acquire parts/material that meet the initial production configuration.

From this contractor's experience, SAIP is a beneficial and sagacious process that is only limited by production capacity and the Customer's budget. Due to fiscal constraints of the Customer, SAIP has not been exercised to its maximum capability.



3. When the SAIP process is used in the realm of aircraft electronics, spares contracting time is decreased by at least 50 percent (estimated). The majority of the reduction is found in the elimination of the manufacture lead time required for complex electronic components. This savings is significant and further justifies the maximum use of SAIP.
4. Life Cycle Cost models like LCC MOD/F-16 are available and can be programed to compute the actual savings when using the SAIP process.
5. Some other factors that contribute to SAIP savings are:  
(Importance Rating (IR) based on a scale of 10 with 10 being the most important)
  - a. Increased Weapon System Availability due to spares availability when prime equipment is delivered.  
IR=10
  - b. Decreased Maintenance Manhours per Flying Hour due to increased availability rates.  
IR= 9
  - c. Enhances the Weapon System Maintenance Training Program due to the higher availability rate. In other words, more Fully Mission Capable Weapon Systems equals increased possibility that the Weapon System can be used for maintenance training vice aircrew training.  
IR= 6
  - d. Reduction in contractor administrative costs.  
IR= 9
  - e. Reduced costs since spares are being contracted at production-quantity prices. IR=10
  - f. Reduced Weapon System cannibalization during initial deployment thus enhancing the maintainability aspects of the Weapon System while further reducing Maintenance Manhours per Flying Hour. IR=8
  - g. Increased Weapon System Reliability due to decreased cannibalization.  
IR=8

6. (a.) Purchasing SAIP items at the same time and on the same contract as production items is the preferred method to institute SAIP since administrative costs are reduced; production items and spares are the same configuration; provisioning contract data requirements for prime equipment and spares accomplished simultaneously; and there is only one contract to manage.
7. recommends that the SAIP technique be an agenda item for all Integrated Logistics Support Management Team Meetings. The ILSMT forum puts the contractors, ASO and the customer face-to-face to discuss problem areas and develop Action Items to solve all logistical matters. The ILSMT would be an ideal setting for the contractor to present production schedules for ASO and Customer SAIP action to reduce the SAIP window of opportunity loss.
8. SAIP experience tells us that governmental fiscal constraints have limited the available SAIP benefits in past contracts. If the SAIP technique were used to the maximum extent possible, then the "buy-in" phenomenon would be discouraged and reduced. However, based on the 1993 government cuts in the defense budget, the SAIP technique is not close to maximization.
9. The primary benefits from SAIP are reduced Life Cycle Costs; Spares availability during Prime Equipment deployment in the field; increased operational readiness. The primary risk associated with SAIP is the changing of the configuration baseline to the point where new spares would have to be procured while SAIP spares would be condemned. The cost saving benefits do outweigh the risks.
10. has never entered into a SAIP type contract with non-government customers.
11. Attached are documents which pertain to the SAIP process:
  - Atch 1:** DD Form 1664, SAIP Data Item Description
  - Atch 2:** LSA-155, Recommended Spares Parts Lists for Spares Acquisition Integrated with Logistics
  - Atch 3:** SAIP LSA Record
  - Atch 4:** SAIP Process

Date: 11 MARCH 1993

Name of your Organization: INTEGRATED Logistics Support -

Your office or section: Logistics Systems Engineering

Your position: Manager

Number of years in your current position: 5

Number of years you have worked in the acquisition field: No direct acquisition experience. I was from my organization for the responses.

Phone number: (607) 751-5449

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1. Have you had any experience with contracts/programs that employed the SAIP technique? if so, please list systems on which the SAIP technique was used.

① Adapted Interface Surface Terminal

② Combat Talm II

2. One of the issues the Government must consider is under what circumstances the SAIP technique would be most appropriate or beneficial. For example:

1. Should SAIP be restricted to high cost repairable items only or is it appropriate for low cost consumables spares?

2. Should SAIP be restricted to initial outfitting requirements for new systems or is it appropriate for routine replenishment requirements?

What are your thoughts on these two questions? Can you suggest any other qualifiers? (Monetary thresholds, quantities, shipsets, etc.)

SAIP should not be used on development or concurrent programs. Ensure a stable configuration before using SAIP. Initial outfitting is satisfactory for utilizing SAIP as long as configuration is solid. Recommend not using SAIP for consumable spares since these can be "broken out" from the actual manufacturer at a significant cost savings. In addition, you don't run the risk of design changes making these items obsolete. Generally repair parts are low cost items.

3. Generally, does SAIP increase or decrease the amount of time required to contract for spares? Why? Can you estimate a percentage?

No difference if there are no through put problems. Through put problems can be avoided if stable-designed LRUs, SRUs and high repairable items are procured early in the program. PLANNING for the order can be made if the manufacturer is aware of government intentions up front. Fixtures, molds and GFE can be ordered in advance to have a smooth production flow.

4. Another key issue for the Government is determining price savings from a SAIP effort. Can you suggest any methods that the Government might use to estimate savings of SAIP over a stand alone spares purchase (excluding a request for two separate proposals)? How accurate do you believe such estimates would be?

You should realize a 10% savings in cost due to scheduling, ordering and handling.

Have contractor bid SAIP AS AN option in the contract.

Unit and extended prices are always determined by quantity & when needed.

5. Please list factors that you think contribute to SAIP savings (if not discussed above) and indicate which are the most important. (For example, reduction in administrative costs from multiple procurement, avoidance of contractor setup costs, learning curve etc.)

See 4.



6. Which of the following approaches to contracting for SAIP spares is preferable? Why?
- a. Purchasing SAIP items at the same time and on the same contract as production items?
  - b. Purchasing SAIP items at the same time as production items but on different contracts?
  - c. Purchasing SAIP items through the prime contractor or directly from the prime's suppliers/vendors (Design Control Activities)?
  - e. Some other arrangement? (Please describe)

① When you should purchase through the Prime Contractor

- a. Design not stable
- b. Developmental or concurrent program
- c. Spare require upending prior to all equipment is delivered

② When you should purchase from the manufacturer ("break out").

- a. When you have a very stable design configuration

7. One of the most difficult issues for the Government with respect to SAIP appears to be coordination of the spares contracting effort with the end item production contracting effort. Offices/commands responsible for buying spares are often different from those responsible for production contracts. ASO in particular feels opportunities for SAIP are missed due to a lack of consistent and timely notification of ordering windows for integrating spares purchases with end item production purchases or, possibly, other service spares purchases. Can you make any suggestions with respect to improving coordination/communication in this area from the contractor's perspective? (For instance, can contractors provide routine notification to ASO of opportunities for consolidating spares purchases with production buys or other service spares buys via Electronic Data Interchange?)

ASO should look for help on how to streamline their entire operation regarding spares inventory, obsolete parts, upgrading spares, methods of restocking etc. Many companies would respond and the savings would be enormous. The issue you highlight is only one of many that ASO has. Technology has moved forward very rapidly in this business but ASO is lagging in utilizing available technology.

8. Previous researchers have suggested that combining spare part requirements in production contracts will discourage or reduce the "buy-in" phenomenon since contractors will not be able to count on follow-on spares sales to recover costs or to make additional profit. Do you agree with this statement? Please comment.

You will find very little 'buy-in' phenomenon with fixed price contracts. Working closer with contractors usually result in bigger savings on both DoD and contractor sides.

9. What do you feel are the primary risks and benefits associated with SAIP (monetary, PALT, obsolescence/configuration, correct spares quantities, readiness, etc.)? Do the benefits outweigh the risks?

Primary benefit : Cost

Primary risk : 1) Spares at improper levels due to configuration changes  
2) Difficult to judge proper amount of spares early in the program.

You must judge program by program. Generally if a program lasts more than 2-3 years it is not beneficial since requirements change with time.

10. Have you entered into SAIP type contracts with non-Government customers? If so, can you briefly explain the character/nature of these agreements? For example: Are spares requirements included on production contracts? How are customer's purchasing offices notified about SAIP opportunities/production windows? What type of items are purchased in this manner?

We are just getting started into non-DoD contracts. No experience yet.

11. Can your company or organization provide copies of any historical files, data, documents, or directives that would support information you provided above or that might be otherwise helpful. If so please list some examples. Is it possible for you to mail them to me, or would I be required to make an on-sight visit to collect them?

We don't have specific data on this since we need to DoD requirements and "break out" is held close by our DoD customer.



APPENDIX C  
DEPARTMENT OF THE NAVY  
NAVAL AIR SYSTEMS COMMAND  
NAVAL AIR SYSTEMS COMMAND HEADQUARTERS  
WASHINGTON DC 20381

IN REPLY REFER TO  
4200  
AIR-214A  
24 SEP 1991

AIR-02 Policy and Procedures Memorandum #150A

Subj: SPARES ACQUISITION INTEGRATED IN PRODUCTION (SAIP)

Ref: (a) DOD Instruction 5000.2, Part 7, Section A, 23 Feb 91  
(b) NAVAIR Integrated Logistics Support Statement of Work,  
00-25-404, 23 Feb 90  
(c) Data Item Description DI-V-7200

Encl: (1) Sample SAIP Letter

1. As we continue to improve the processes supporting our customers, we need to be alert to fleet requirements. In most cases, these requirements are provided to us directly from program or weapon systems managers in the form of procurement requests (PRs) or engineering change proposals (ECPs). However, a major element of fleet support relates to supporting existing systems through spare parts.

2. The existing process provides for incorporation of interim and replenishment spares into the PR. Draft PRs are provided to the Navy Aviation Supply Office (ASO), Philadelphia, for incorporation of spares. This process, as it exists, has proved inadequate in responding to ASO demand, funding volatility, and prime contractor procurement cycle schedules. It also has limited opportunities for combined buys.

3. Pursuant to references (a) and (b), AIR-214 has prototyped a SAIP process which expands the opportunities for combined buys by phasing ASO spares requirements with prime contractor annual year procurement order release cycles rather than the NAVAIR fiscal year procurement cycle. Under this process, prime contractors notify NAVAIR procuring contracting officers (PCOs) and ASO weapons managers of their procurement order release schedule planning data for annual year and other major buys and provide them with a listing of the items comprising the planned releases. ASO weapons managers evaluate the planning information for any combined buy opportunities and decide whether or not to initiate a coordinated or concurrent stand-alone buy.

4. PCOs will initiate the SAIP process by letter to prime contractors inviting their participation through notification of procurement order release schedules and agreement to combine Navy





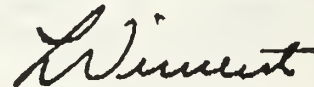
Subj: SPARES ACQUISITION INTEGRATED IN PRODUCTION (SAIP)

material requirements with their own, wherever possible, and to the extent feasible within their existing procurement systems. A sample letter is included as enclosure (1). If the prime contractor agrees to participate, the PCO will include in all annual year procurement contracts a SAIP line item structured as a provisioned item ordering (PIO) line item with an associated contract data requirement listing item, utilizing reference (c), for submission of procurement order release schedule planning and ordering information in the prime contractor's format as necessary. Additionally, PCOs will report contractor specific SAIP transactions in each prenegotiation business clearance and SAIP process implementation progress per currently existing quarterly Buy Our Spares Smart reporting requirements.

5. A decision diagram outlining this SAIP process is included as an attachment to enclosure (1).

6. CDR Bob Cowley is the AIR-02 point of contact on this subject.

7. This PPM supercedes PPM #150.



L. Vincent

Assistant Commander for Co

Distribution: Division Directors, Branch Heads, PCOs  
Copy to: AIR-02, NADOC-02, AIR-114, AIR-4111, AIR-412, AIR-51123, ASO-00B



**SAMPLE**  
DEPARTMENT OF THE NAVY  
NAVAL AIR SYSTEMS COMMAND  
NAVAL AIR SYSTEMS COMMAND HEADQUARTERS  
WASHINGTON, DC 20381

IN REPLY REFER TO

4200

AIR-\_\_\_\_\_

Name and Title  
Contractor  
Address

Dear (Mr./Mrs./Ms. \_\_\_\_\_):

Over the past twelve months, Naval Air Systems Command (NAVAIRSYSCOM) prototyped a Spares Acquisition Integrated In Production (SAIP) process providing for direct integration of Aviation Supply Office (ASO) spares requirements into a prime contractor's annual year procurement order release schedule. Under this initiative, the prime contractor prospectively notified the appropriate ASO weapons manager and procuring contracting officer (PCO) of procurement order release date planning information for annual year and other major buys, and provided a listing of the material comprising the release.

The weapons managers reviewed the prime contractor procurement order release planning data for potential procurement synergy in which common or similar items required by both parties could be coordinated through concurrent or tandem buys and procured at a lower economic cost to each. Enclosure (1) is a flowchart detailing this SAIP process.

You are invited to participate in this process wherever possible, and to the extent feasible within your existing procurement system, by combining ASO or NAVAIRSYSCOM requirements with your fiscal year annual production buy or other major requirements purchase order releases to achieve economic ordering quantities. Your participation would include providing cost and ordering information in your existing format in order to document achieved savings.

If you desire to participate or require further clarification, please contact CDR Bob Cowley, AIR-214A, at telephone number (703) 692-0927.

Sincerely,

Procuring Contracting Officer

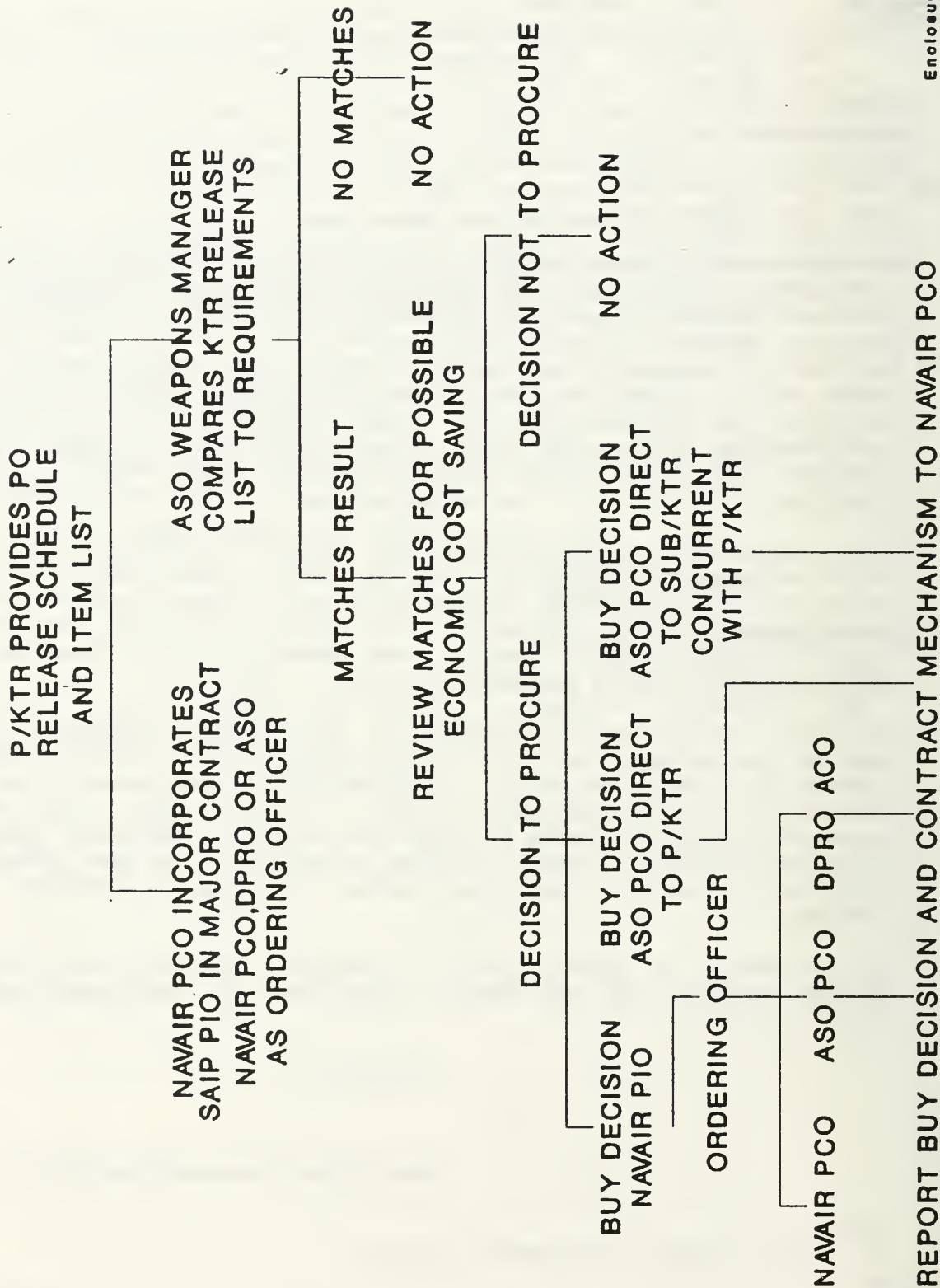
Encl:

(1) SAIP Process Flowchart Diagram

Enclosure (1)



# SAIP PROCESS FLOW DIAGRAM



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